

Service Manual

**FM/AM/FM STEREO RADIO WITH DOLBY *
NOISE REDUCTION SYSTEM, CASSETTE TAPE
PLAYER/RECORDER AND RECORD PLAYER**

**Compact Stereo
SG-2080L**

Specifications

AMPLIFIER SECTION

Power Output	MPO 2 × 30W (THD 1%, 4 ohms) RMS 2 × 23W/Channel (THD 1%, 4 ohms) 2 × 18W/Both Channel (THD 1%, 4 ohms)
Frequency Response	10 Hz ~ 25 kHz, ±1.5 dB
Input Sensitivity and Impedance:	
AUX	300 mV, 100k ohms
Tape	300 mV, 30k ohms
Phono	2 mV, 47k ohms
MIC	1 mV, 3k ohms
REC OUT and Impedance	30 mV, 82k ohms (DIN)
Tone Control:	
Bass	±15 dB at 50 Hz
Treble	±15 dB at 10 kHz

FM TUNER SECTION

Frequency Range	87.5 MHz ~ 108 MHz (3.43 ~ 2.78 m)
Intermediate Frequency (IF)	10.7 MHz
Sensitivity	2.5 μV (IHF) 3.5 μV (40 kHz deviation, S/N 26 dB) (DIN)
Distortion	MONO: 0.6% (at 1 kHz, 60 dB, 100%) STEREO: 0.8% (at 1 kHz, 60 dB, 100%)
Signal to Noise Ratio	60 dB (at 1 kHz, 60 dB, 40 kHz)
Stereo Separation	35 dB (at 1 kHz, 60 dB, 30%)
Image Ratio	45 dB (98 MHz)

AM TUNER SECTION

Frequency Range	MW: 525 kHz ~ 1605 kHz (572 ~ 187 m) LW: 145 kHz ~ 285 kHz (2070 ~ 1050 m) SW: 5.9 MHz ~ 18 MHz (50.8 ~ 16.7 m)
Intermediate Frequency (IF)	455 kHz
Sensitivity	MW: 100 μV/m for 50 mW (1 MHz) LW: 250 μV/m for 50 mW (220 kHz) SW: 8 μV for 50 mW (12 MHz)
Image Ratio	MW: 45 dB (1 MHz) LW: 43 dB (220 kHz) SW: 15 dB (12 MHz)

RECORD PLAYER SECTION

Player System	Auto Return, Belt-Drive
Turntable	30 cm (12")
Turntable Speeds	33-1/3 and 45 r.p.m., 2 speeds
Deviation of	+1.5% ☐ DIN -1.0% ☐
Phonomotor	Frequency Generated Servo DC Motor
Cartridge	Moving Magnet (EPC78SMBD)
Stylus	Diamond (EPS34STSD)
Stylus Pressure	1.5 g ~ 2.0 g
Frequency Response	20 Hz ~ 20 kHz (DIN)



* Dolby and "Double D" devices are the trade marks of the Dolby Laboratories Inc.

Separation	23 dB (DIN)
Signal to Noise Ratio	60 dB (DIN)
Wow and Flutter	0.15% (DIN WTD)

TAPE DECK SECTION

Deck System	Auto-Stop Cassette System
Track System	4-Track, 2-Channel
Recording System	AC Bias 50 kHz
Erasing System	AC Erase 50 kHz
Tape Speed	4.75 cm/sec (1-7/8 i.p.s.)
Frequency Response	25 Hz ~ 13 kHz (Normal), 20 Hz ~ 16 kHz (CrO ₂)
Signal to Noise Ratio	Dolby OUT: 54 dB Dolby IN: 60 dB (10 dB or more improved at more than 5 kHz)
Wow and Flutter	0.15 WRMS 0.35% (DIN)
Erase Ratio	70 dB
Channel Separation	40 dB
Cross Talk	60 dB

POWER SUPPLY	AC 110V, 120V, 220V, 240V, 50/60 Hz
---------------------------	--

POWER CONSUMPTION	135 W
--------------------------------	-------

DIMENSIONS (W × H × D)

Center Unit	622 mm × 183 mm × 434 mm (24-1/2" × 7-7/32" × 17-3/32")
-------------------	--

WEIGHT

Center Unit	14.65 kg (32 lb. 4 oz)
-------------------	------------------------

● Specifications are subject to change without notice for further improvement.

 **National Panasonic**

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

DISASSEMBLY INSTRUCTIONS

■ To Remove Record Player

Lift record player and unplug 5P connector jack and 2 pin plugs from PC board.

Note:

When removing turntable, be sure to take off the belt from the capstan as shown in Fig. 1.

■ To Replace Components

1. Remove record player. (Refer to above instructions.)
2. Push EJECT button to open cassette cover.
3. Carefully push stops of cassette cover located on both sides, as shown in Fig. 2. Then cassette cover can now be removed from cassette deck panel.
4. Remove two cassette deck panel mounting screws, Nos. 19 ~ 20, as shown in Fig. 4.
5. Remove nine (9) knobs from front panel.
6. Remove five (5) bottom board mounting screws, Nos. 1 ~ 5, as shown in Fig. 4.
7. Remove three (3) rear board mounting screws Nos. 6 ~ 8, and remove two (2) cabinet mounting screws, Nos. 9 ~ 10, as shown in Fig. 4.
8. Unsolder faulty components, and replace it with a new one.
9. To reassemble, reverse above procedure.

■ To Remove Escutcheon from Chassis

1. Refer to above instructions 1 to 5.
2. Remove three (3) escutcheon mounting screws Nos. 11 ~ 13, as shown in Fig. 4.
3. To reassemble, reverse above procedure.

■ To Remove Cassette Tape Deck

1. Refer to instructions 1 to 7 above.
2. Remove five (5) cassette deck mounting screws Nos. 14 ~ 18, as shown in Fig. 4, and remove mike jack.
3. To reassemble, reverse above procedure.

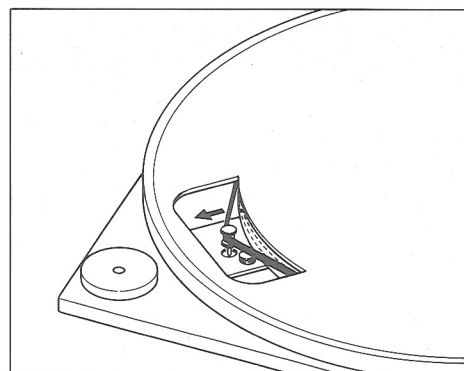


FIG. 1

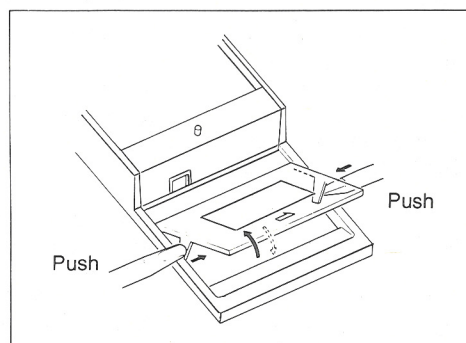


FIG. 2

SERVICING AID

■ Free-Stop Mechanism of Dust Cover

This models equipped with free-stop mechanism of dust cover. Dust cover can be stopped to be kept open in the free-stop angle range from about 30° to 60°, as shown in Fig. 3. The mechanism has been thoroughly adjusted in best condition at the factory, and under normal use should not be required additional adjustment. However, after prolonged use or hinge(s) replacement, it may be necessary to adjust hinges.

■ How to Adjust Hinges

1. When the screw is turned clockwise (direction A), the lever moves to direction A' to lessen the spring tension, and opening and closing the dust cover become soft.
2. When the screw is turned counterclockwise (direction B), the lever moves to direction B' to increase the spring tension, and opening and closing the dust cover become hard.

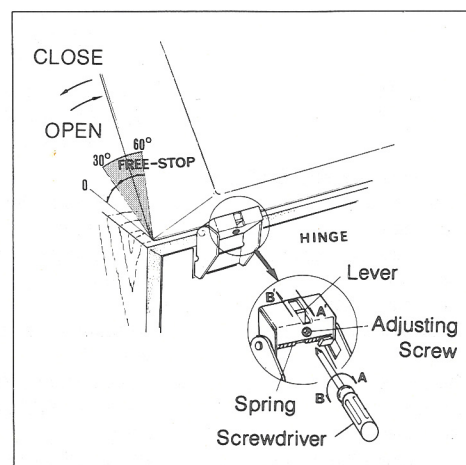
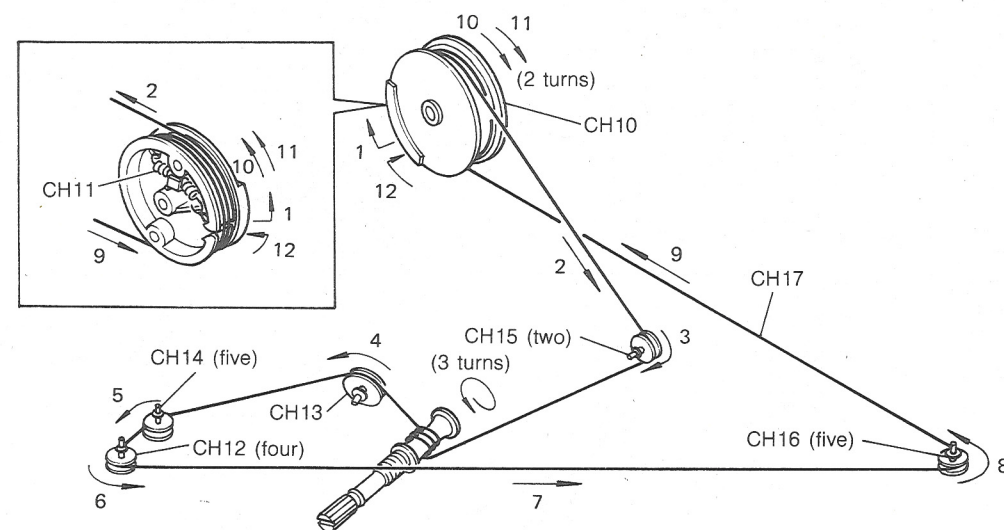


FIG. 3

①~④.....XYN4+C12S
⑤.....XTW3+8FZK
⑥~⑩.....XTW3+8
⑪~⑬.....XTV3+8FZK
⑭~⑱.....XTV3+8BR
⑲~⑳.....XTN26+C8



DIAL CORD STRINGING GUIDE



Tuning Capacitor..... Opened Position
Dial Cord Length..... 165 cm

FIG. 6

ALIGNMENT INSTRUCTIONS (RADIO) – 1

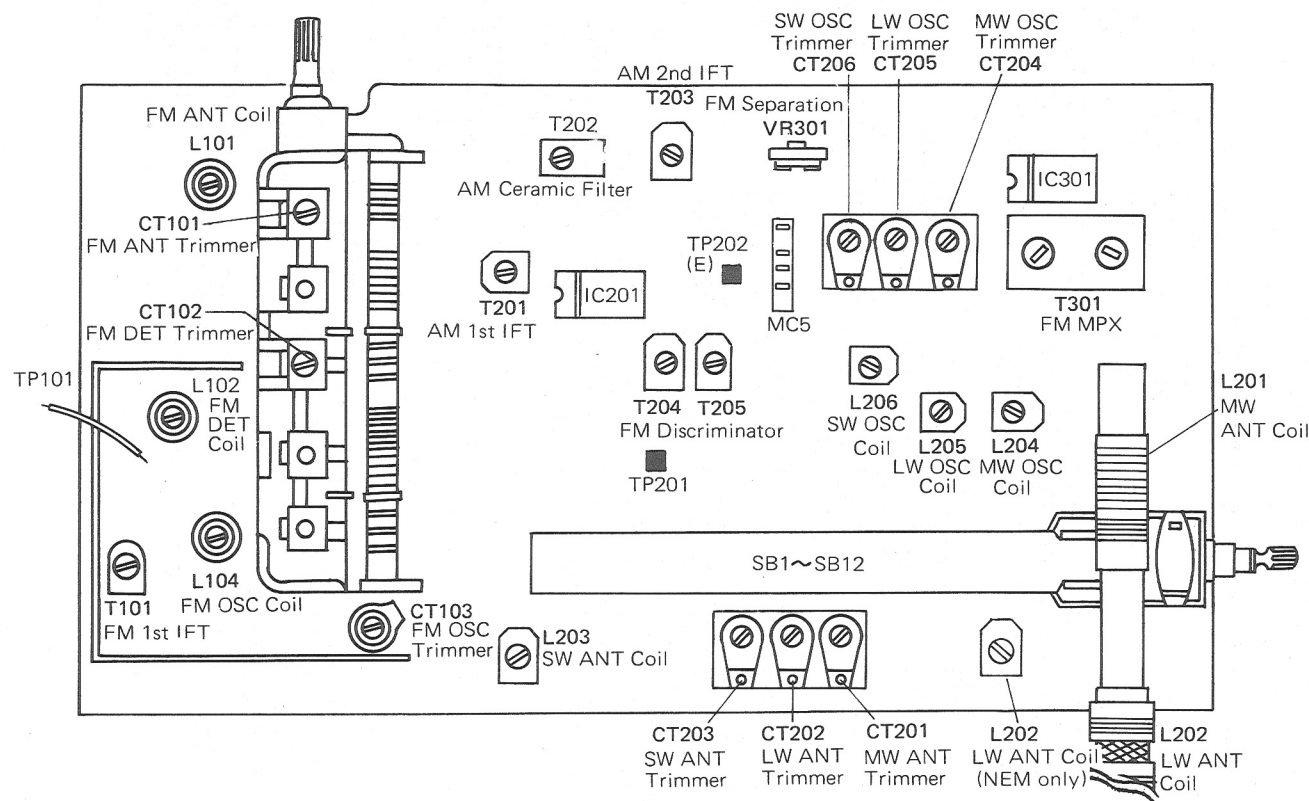


FIG. 7

ALIGNMENT INSTRUCTIONS (RADIO) – 2

- Notes:**
- 1. Volume Control Maximum (AM-IF and RF, FM-RF)
Minimum (FM-IF)
 - 2. Bass and Treble Control Center
 - 3. Balance Control..... Center
 - 4. Function Selector Radio
 - 5. Band Selector LW, MW, SW, FM MONO, FM AUTO
 - 6. Power Switch ON
 - 7. Tape Monitor..... SOURCE
 - 8. Output of signal generator should be no higher than necessary to obtain output reading.
 - 9. Make certain that speaker system is connected to the tuner when aligning.

STEP	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
AM-IF and RF ALIGNMENT						
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz	Point of non-interference (on/about 600 kHz)	Output meter across speaker jack (L). (Imp. 4 Ω)	T201 (AM 1st IFT) T203 (AM 2nd IFT)	Adjust for maximum output.
2 (LW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	145 kHz 30% Mod. with 400 Hz	145 kHz (16.1 mm)	Output meter across speaker Jack (L). (Imp. 4Ω)	L205 (LW OSC Coil) L202 (LW ANT Coil)	Adjust for maximum output (NEM: coil)
3 (LW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	285 kHz 30% Mod. with 400 Hz	285 kHz (195 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	CT205 (LW OSC Trimmer) CT202 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4 (MW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	550 kHz 30% Mod. with 400 Hz	550 kHz (22.3 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	L204 (MW OSC Coil) L201 (MW ANT Coil)	Adjust for maximum output by sliding coil L201 along ferrite core.
5 (MW)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	1500 Hz 30% Mod. with 400 Hz	1500 kHz (191.2 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	CT204 (MW OSC Trimmer) CT201 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
6 (SW)	Connect to EXT antenna and ground through SW Dummy antenna. (Refer to Fig. 10)	5.9 MHz 30% Mod. with 400 Hz	5.9 MHz (8.4 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	L206 (SW OSC Coil) L203 (SW ANT Coil)	Adjust for maximum output.
7 (SW)	Connect to EXT antenna and ground through SW Dummy antenna. (Refer to Fig. 10)	18 MHz 30% Mod. with 400 Hz	18 MHz (206.2 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	CT206 (SW OSC Trimmer) CT203 (SW ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).

Note: T202 is pre-aligned. Do not touch it.

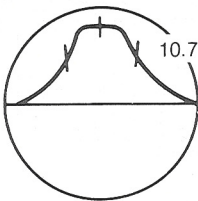


FIG. 8

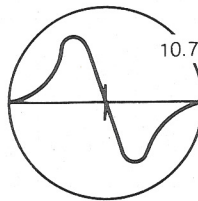


FIG. 9

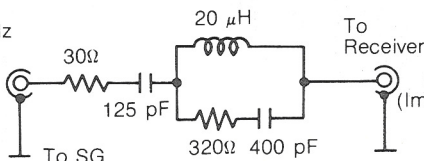


FIG. 10

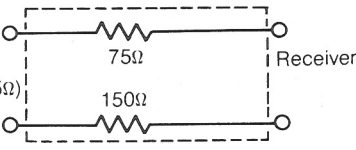
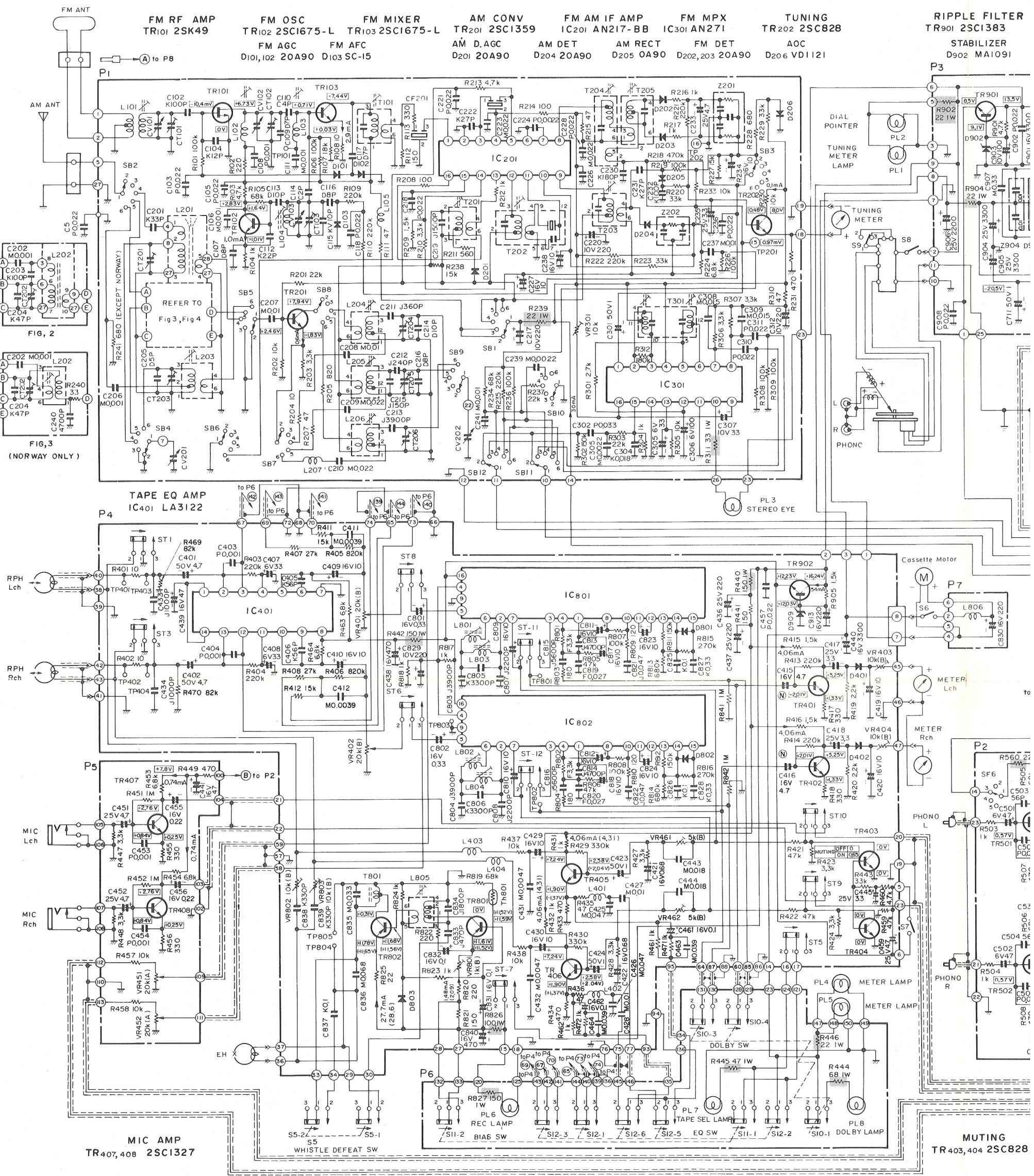


FIG. 11 DUMMY ANTENNA

SCHEMATIC DIAGRAM OF



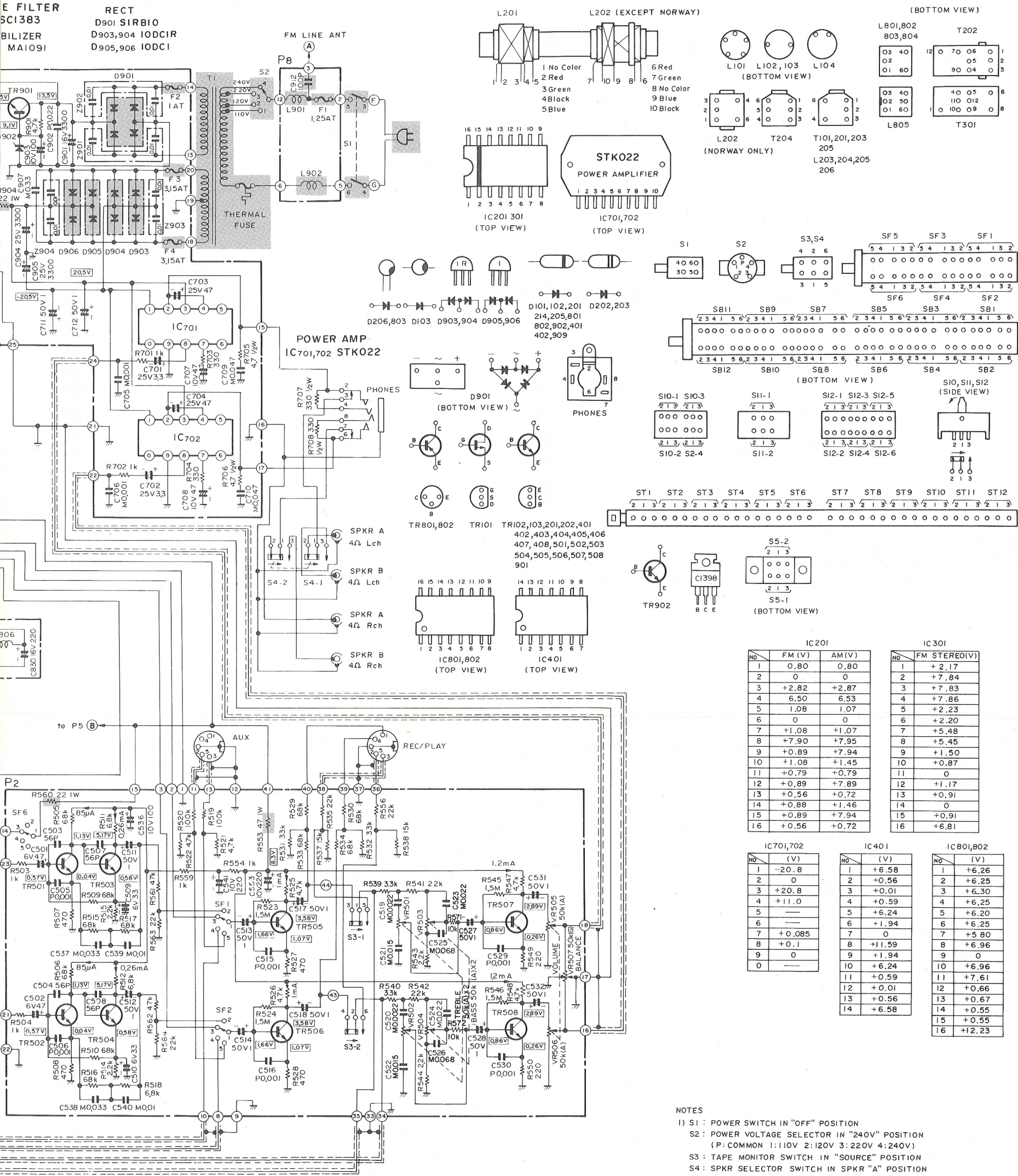
R	241	401											101	102											106	107	108	109	110	111	112	113											213											214											215											216	221											228	229											231											901																													
	402	453											103	105	201											204	205											209	208	211	212											239	801	805	301	222	223											218	219	217	227											230	310											902											560																																			
	447	451	455											449	403	104											202	203	207											210	238	234	235	236											237	431	803	302											303	304											811	220	233											905	419											904											50																							
	448	452	456	454											404	405											408	411											442											818	817	820	819											826	437	433	802	806	472	807	809	462	813	461	305	224	226	306	307	308											415	413	417	423	420	460											503											50																						
	457	469												406	407											412											818											817	820	819											826	438	432	804	429	435	808	810	425	812	471	815											311	440											415	414	418	424											443											504											50									
458	470																						464	463											825											824	822	823	821											827	841	434	842	430	436	428	427	426	814											816	445											441	421	422	446	444											459											50																						
C	206	433											201	102	104											108	110	109											116											208	117											221	227	224											230	301	231	232	305											233	237	234											3											903																										
	434	539	106											112	107	108	109	110	111	114	115											210	215	212	214											807	809	239											220	303	817	304	823	306	235	236											307	309	457	312											913											906											904											907																
	455	401	107											207	411											409											213	801	216											834	803	241	808	810											302	813	812	425	427	822	443	826	308	436	310	311	415											417	440											905											503																													
	451	453	456	402	403											407	405	838	839	410	835											438	829	802	833	804	805	831											431	429	815	814	803	424	428	421	444	461	827											437	416											418											501											504																																				
	425	454	441	404											408	412	406											837	836											832											806	840											432	430	816	804	426	462	422	464	463	828											420	445	459											502											506																																	
L T S	101	201	202	203											102	104	103	207											204	205	206	105											805	801	802	803	804	403	404											401	402											806																																																																				
	Sb2	ST1	ST3	Sb4											Sb5	Sb6											Sb7	Sb8	S5-2	S5-1	ST8	ST6											Sb1	Sb9	SII-2	Sb12	ST7	Sb11	Sb10	S12-3	ST11	ST12	S12-1	S12-6	S12-5											S10-3	S10-4	Sb3	S11-1	S12-2	ST5	ST9	ST10	S10-1	S7	S6	S9	S8											Sf6																																																			

* This diagram might be modified without notice for further development of technology.

1 OF MODEL SG-2080L

E FILTER
SCI383
BILIZER
MA1091

RECT
D901 SIRB10
D903,904 IODC1R
D905,906 IODC1



LISTING
104 2SC828
PHONO AMP
TR501,502,503,504 2SC1327
AF AMP
TR505,506,507,508 2SC900

TER AMP
2 2SC828
RECT
D401,402 20A91

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

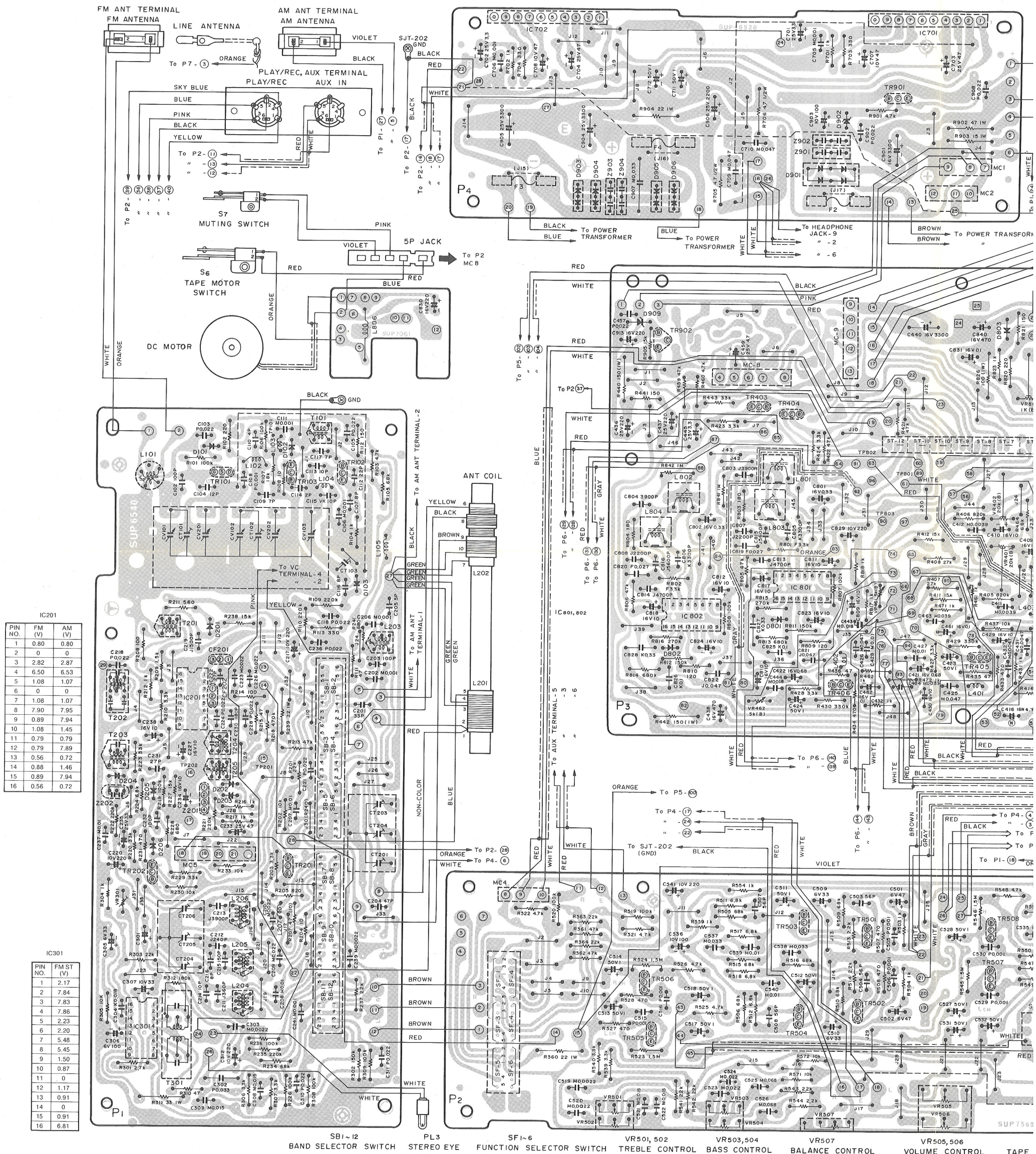
901	560	505	509	517	561	522	521	523	527	540	542	545	549
503	507	515	512	563	522	521	523	527	540	542	545	549	
504	506	510	514	562	559	554	524	526	528	543	571	546	548
	508	516	518	564						544	572	550	
903	902	901	705	511	701	703			910	911	912		
904	907	711	712	706	509	702	707	709					
905	503	507	539	536	704	451	708	710	535	517	519	523	527
830	505	508	512					513	515	518	521	525	529
501	504	537	510					514	516		520	524	528
502	506	538	540								522	526	530
106							901	902					
SF6							SF1	SF2	S2	S4	SI	S3	

- NOTES
- 1) S1 : POWER SWITCH IN "OFF" POSITION
 - S2 : POWER VOLTAGE SELECTOR IN "240V" POSITION
(P: COMMON 1:110V 2:120V 3:220V 4:240V)
 - S3 : TAPE MONITOR SWITCH IN "SOURCE" POSITION
 - S4 : SPKR SELECTOR SWITCH IN SPKR "A" POSITION
 - S5 : WHISTLE DEFEAT SWITCH IN "A" POSITION
 - S6 : TAPE MOTOR SWITCH IN "OFF" POSITION
 - S7 : MUTING SWITCH IN "OFF" POSITION
 - SF1-6: FUNCTION SELECTOR SWITCH IN "RADIO" POSITION
(1: COMMON 2: PHONO 3: RADIO 4: TAPE 5: AUX)
 - SB1-12: BAND SELECTOR SWITCH IN "FM MONO" POSITION
(1: COMMON 2: FM MONO 3: FM AUTO 4: MW 5: LW 6: SW)
 - ST1-12: REC/PLAY SWITCH IN "PLAY" POSITION
 - S8 : PHONO MOTOR SWITCH IN "OFF" POSITION
 - S9 : 33-45RPM SELECTOR SWITCH IN "33" POSITION
 - S10: DOLBY SWITCH IN "OFF" POSITION
 - S11: BIAS SWITCH IN "NORMAL" POSITION
 - S12: EQ SWITCH IN "NORMAL" POSITION
 - 2) Letters M, P, K, J and F indicate tolerance of capacitors as follows;
M=±20% P=±10% K=±10% J=±5% F=±1%
 - 3) DC Voltages condition to be measured with DC VTVM under
no signal condition in "AM" "FM" position
and Cassette Deck is operated in Rec/Play

SCHEMATIC DIAGRAM SG-2080L

WIRING DIAGRAM OF MOD

TR902		TR403, 404		TR901		TR405, 406		TR401, 402	
C	16.24V	C	0V	C	13.5V	C	7.24V	C	5.25V
B	12.03V	B	0.65V (MUTING ON)	B	9.1V	B	2.58V (2.04V)	B	2.01V
E	12.23V	E	0V (MUTING OFF)	E	8.5V	E	1.90V (1.37V)	E	1.33V
Ic	54mA	Ic	0V	Ic	5.1mA	Ic	4.06mA (4.31mA)	Ic	4.06mA
		le	—						



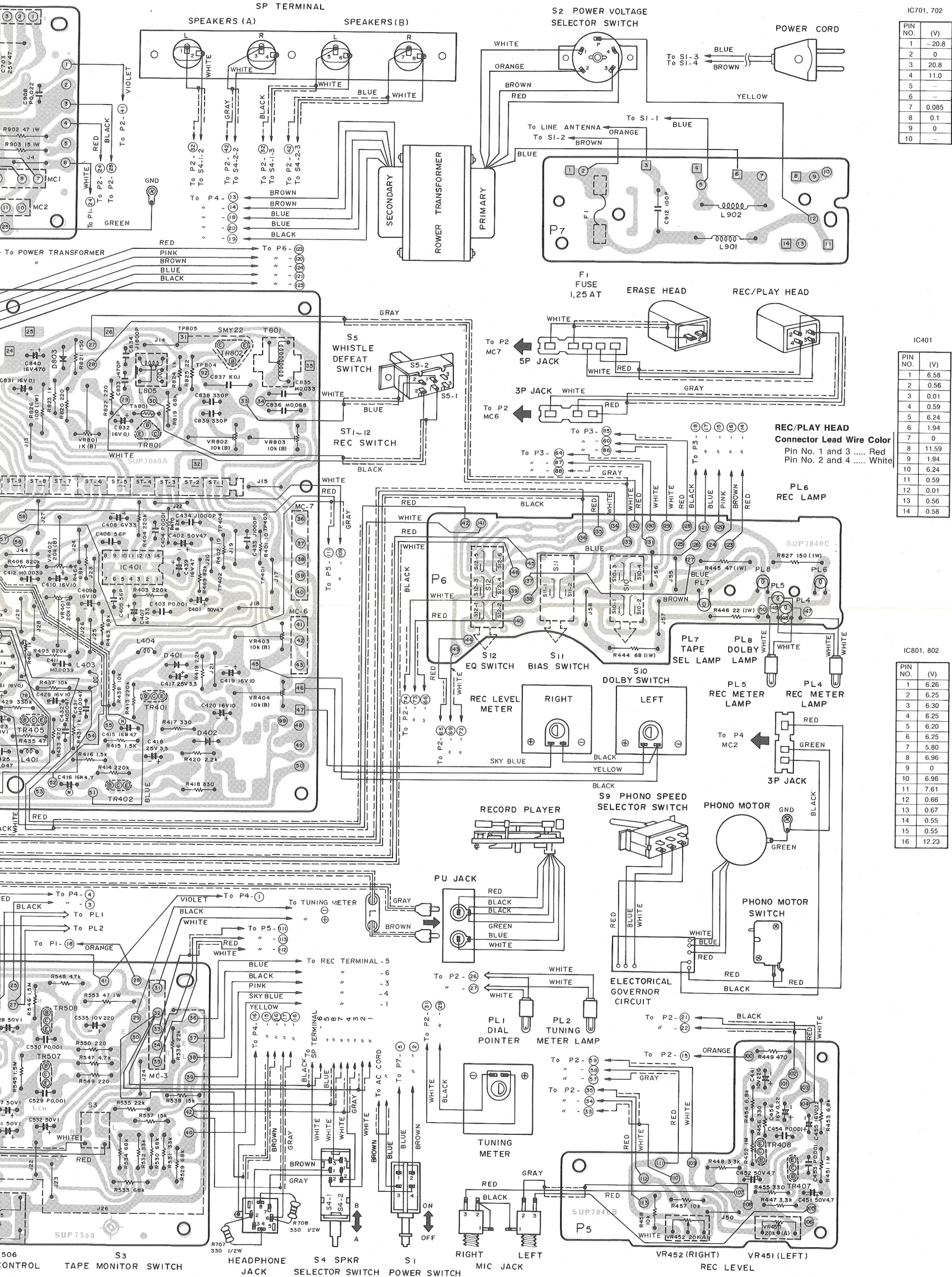
* This diagram might be modified without notice for further development of technology.

TR101		TR102		TR103		TR201		TR202	
D	6.73V	C	2.83V	C	7.44V	C	7.94V	C	8.0V
G	-10.4mV	B	1.64V	B	0.71V	B	2.46V	B	0.48V
S	0V	E	1.01V	E	0.03V	E	1.83V	E	0.97V
ID	—	Ic	1mA	Ic	2.9mA	Ic	0.6mA	Ic	0.1mA

TR505, 506		TR503, 504		TR501, 502		TR507, 508	
C	3.58V	C	5.17V	C	1.13V	C	2.89V
B	1.66V	B	1.13V	B	0.57V	B	0.86V
E	1.07V	E	0.58V	E	0.04V	E	0.26V
Ic	1mA	Ic	0.26mA	Ic	85μA	Ic	1.2mA

OF MODEL SG-2080L

TR401, 402		TR801		TR802	
C	5.25V	C	0V	C	0.31V
B	2.01V	B	11.59V (11.52V)	B	11.68V (11.56V)
E	1.33V	E	11.61V (11.52V)	E	11.78V (11.65V)
Ic	4.06mA	Ic	1.48mA (2.09mA)	Ic	27.7mA (28.6mA)



PIN NO.	(V)
1	-20.8
2	0
3	20.8
4	11.0
5	-
6	-
7	0.085
8	0.1
9	0
10	-

PIN NO.	(V)
1	6.58
2	0.56
3	0.01
4	0.59
5	6.24
6	1.94
7	0
8	11.59
9	1.94
10	6.24
11	0.59
12	0.01
13	0.56
14	0.58

PIN NO.	(V)
1	6.26
2	6.25
3	6.30
4	6.25
5	6.20
6	6.25
7	5.80
8	6.96
9	0
10	6.96
11	7.61
12	0.66
13	0.67
14	0.55
15	0.55
16	12.23

TR507, 508		TR407, 408	
C	2.89V	C	2.76V
B	0.86V	B	0.84V
E	0.26V	E	0.25V
Ic	1.2mA	Ic	0.74mA

ALIGNMENT INSTRUCTIONS (RADIO) — 3

STEP	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (VTVM or SCOPE)	ADJUST	REMARKS
	CONNECTION	FREQUENCY				
FM-IF and DETECTOR ALIGNMENT						
1	High side through 0.001 mfd to point TP101. Common to chassis.	10.7 MHz (400 kHz SWP.)	Point of non-interference (on/about 98 MHz)	Connect vert amp. of scope to point TP201. Common to chassis. (TP202)	T101 (FM 1st IFT) T204 (FM Disc. IFT)	Adjust for maximum amplitude and symmetrical curve (Refer to Fig. 8)
2	High side through 0.001 mfd to point TP101. Common to chassis.	10.7 MHz (400 kHz SWP.)	Point of non-interference (on/about 98 MHz)	Connect vert. amp. of scope to point TP201. Common to chassis. (TP202)	T205 (FM Disc. IFT)	Adjust for maximum amplitude and proper linearity between ± 100 kHz markers. (Refer to Fig. 9)
* Before aligning step 1, turn the core of T205 fully counterclockwise.						
FM-RF ALIGNMENT						
1	Connect to EXT. FM antenna terminal through dummy antenna. Common to chassis. (Refer to Fig. 11)	90 MHz 30% Mod. with 400 Hz	90 MHz (28.7 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	L104 (FM OSC Coil) L101 (FM ANT Coil) L102 (FM DET Coil)	Adjust for maximum output.
2	Connect to EXT. FM antenna terminal through Dummy antenna. Common to chassis. (Refer to Fig. 11)	106 MHz 30% Mod. with 400 Hz	106 MHz (179.3 mm)	Output meter across speaker jack (L). (Imp. 4 Ω)	CT103 (FM OSC Trimmer) CT101 (FM ANT Trimmer) CT102 (FM DET Trimmer)	Adjust for maximum output. Repeat steps (1) and (2).
* As three output readings will be present, adjustments must be made at center frequency.						
* To correct drift at the FM dial scale (87.5 or 108 MHz), adjust coil L104 and trimmer CT103 with each other.						

FM STEREO ALIGNMENT

Notes: 1. Stereo Modulator: Connect Stereo Modulator to EXT. Mod. terminal of signal generator 2. Signal Generator: Modulation Rate of 19 kHz Pilot Signal 10% Output Level..... 30 dB Frequency..... Approx. 98 MHz 3. Tuner: Volume Control Audible level of speaker sound Treble and bass Control MIN Function Selector Radio Balance Control..... Center Band Selector..... FM AUTO			
19 kHz AMP. ALIGNMENT			
EQUIPMENT CONNECTION		ADJUST	REMARKS
SIGNAL GENERATOR	OSCILLOSCOPE		
Connect to EXT. FM antenna terminal through dummy antenna. (Refer to Fig. 11)	—	(T301)	Pre-aligned. Do not touch it.
SEPARATION ALIGNMENT			
Notes: 1. Signal Generator: Modulation Rate of 19 kHz Pilot Signal 10% Modulation Rate of Right and Left Signal 27% Output Level..... 60 dB 2. Tuner (Balance Control): Adjust balance control level so that output level from both channels becomes equal. 3. Treble and Bass Control MIN			
EQUIPMENT CONNECTION		ADJUST	REMARKS
SIGNAL GENERATOR	VTVM		
Connect to EXT. FM antenna terminal through dummy antenna. (Refer to Fig. 11)	Connect across speaker jack. (left side) (Imp. 4 Ω)	VR301 (Separation Control)	Adjust VR301 for minimum indication on VTVM from the left side output when the right side of stereo modulator is modulated. Adjust VR301 in the same way for the right side. Adjust for best balance between "L to R" and "R to L" separation.

ALIGNMENT INSTRUCTIONS (CASSETTE PLAYER/RECORDER)

Notes:	1. Function Selector TAPE				
	2. Balance Control..... Center				
	3. Depress push buttons PLAY and REC at the same time. (Be sure to release the record safety lever manually.)				
	4. Dolby Switch OUT				
STEP	CIRCUITS	VTVM CONNECTION	TAPE SELECTOR	ADJUSTMENT	REMARKS
1	AC BIAS CIRCUIT	Connect positive side to TP804 (+) and negative side to TP805 (–). (Refer to Fig. 12-a)	Bias SW: Normal	L805	Adjust L805 for maximum indication on VTVM.
2	AC BIAS CIRCUIT	Connect positive side to TP804 and negative side to TP805. (Refer to Fig. 12-a)	Bias SW: CrO ₂	VR801	Adjust VR801 for 12V reading on VTVM.
3	AC BIAS CIRCUIT	Connect positive side to TP401 and negative side to TP403. (Refer to Fig. 12-a)	Bias SW: Normal	VR803	Adjust VR803 and VR802 for 3.3 mV reading on VTVM.
		Connect positive side to TP402 and negative side to TP404. (Refer to Fig. 12-a)		VR802	
4	19 kHz TRAP CIRCUIT	Connect positive side to TP801 and negative side to TP803(E). (Refer to Fig. 12-a)	EQ SW: Normal	L803	Turn Function Selector to AUX and Dolby SW to IN. Apply audio signal (300 mV, 19 kHz) to both L-ch and R-ch AUX terminals. Adjust L803 and L804 for minimum indication on VTVM.
		Connect positive side to TP802 and negative side to TP804(E). (Refer to Fig. 12-a)		L804	
5	DOLBY CIRCUIT	Connect positive side to TP801 and negative side to TP803. (Refer to Fig. 12-a)	EQ SW: Normal	VR401	Turn Dolby SW to IN and playback a test tape (MTT-150). Adjust VR401 and VR402 for 580 mV reading on VTVM.
		Connect positive side to TP802 and negative side to TP803. (Refer to Fig. 12-a)		VR402	
6	VU METER CIRCUIT	—	EQ SW: Normal	VR403, VR404	Turn Dolby SW to IN and playback a test tape (MTT-150). Adjust VR403 and VR404 so that needle rests at +3 dB (mark) as shown in Fig. 12-b.
7	REC CURRENT CIRCUIT	Connect positive side to TP401 and negative side to TP403. (Refer to Fig. 12-a)	EQ SW: Normal	VR461	Turn Function Selector to AUX and Dolby SW to IN. Apply 1 kHz audio signal to both AUX terminals and set both REC VR's at +3 dB on VU meter. Adjust VR461 and VR462 for 0.67 mV reading on VTVM.
		Connect positive side to TP402 and negative side to TP403. (Refer to Fig. 12-a)		VR462	
Notes: 1. Do not touch R/P Head and Erase Head when aligning.					
2. L801 and L802 are pre-aligned. Do not touch them.					
3. MTT-150 is DOLBY LEVEL calibration tape.					

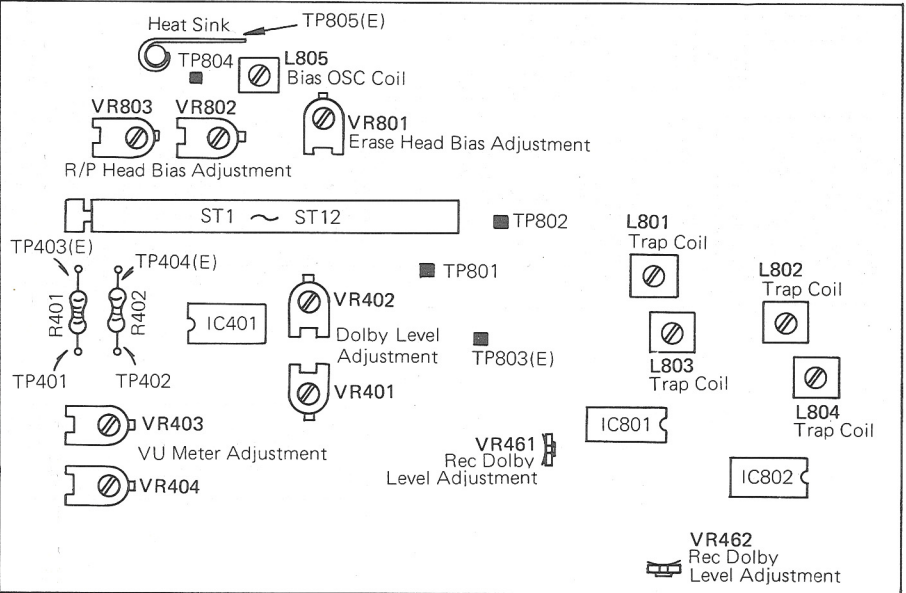


FIG. 12-a

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

Playback a Standard Alignment Tape and turn Azimuty Adjusting Screw for maximum loudness.

* Test Tape (6.3 kHz)
VTT-652 or Equivalent

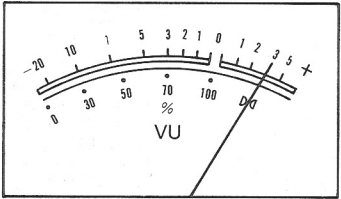


FIG. 12-b

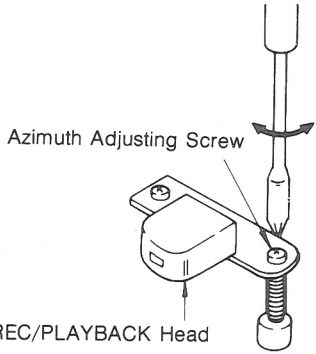


FIG. 13

MECHANICAL ADJUSTMENT OF TAPE PLAYER/RECORDER

PRESSURE ROLLER ADJUSTMENT

1. Switch set to PLAY. (Do not insert cassette.)
2. Hook Spring gauge to arm pressure rollers, as shown in Fig. 14.
3. Pull pressure roller away from the capstan in the direction of arrow 1 with spring gauge and slowly permit the pressure roller to return forward capstan in the direction of arrow 2.
4. Measure tension at time when pressure roller makes contact with capstan (or when pressure roller starts rotating.)
5. The standard tension of pressure roller should be 250 ~ 380 g.
6. If pressure is not within these limits;
Clean the rubber roller and capstan with a soft cloth moistened with alcohol or replace pressure spring.

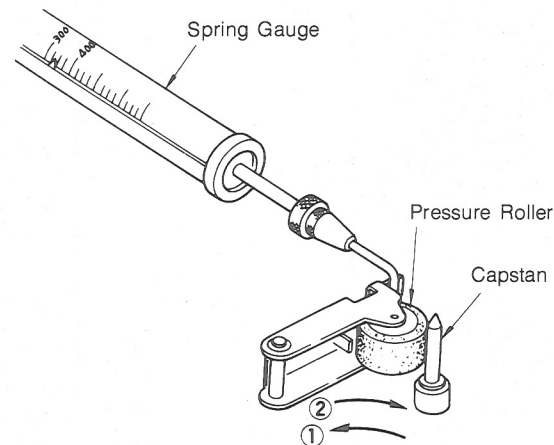


FIG. 14

TAKE-UP TORQUE ADJUSTMENT

- * Test Tape: SRK-CT (Take-up Torque Meter)

1. Insert test tape.
2. Rewind the tape to its starting point.
3. Switch set to PLAY.
4. Read "►" mark of indicator on take-up side, as shown in Fig. 15.
5. Repeat PLAY-STOP several times and read the average tension.
6. The standard take-up tension should be 30 ~ 70 g.cm.

If take-up tension is not within these limits;

- a) Clean main belt, take-up reel and all parts which contact them with a cotton swab moistened with alcohol, and/or
- b) Switch set to "OFF", remove main belt and make sure that take-up reel and take-up clutch are rotating smoothly.
- c) Change take-up clutch tension by turning the friction spring under reel table, as shown in Fig. 16, and/or
- d) Replace take-up clutch.

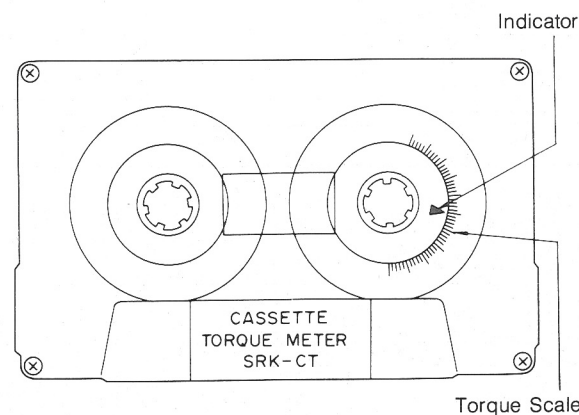


FIG. 15

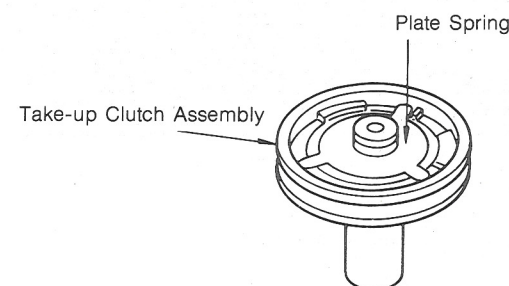


FIG. 16

DOLBY NOISE REDUCTION SYSTEM

GENERAL DESCRIPTION

The Dolby B-Type Noise Reduction System is used in this equipment, which reduces the level of background noise introduced during recording without changing the tone of audio signal.

METHOD OF DOLBY SYSTEM

Signal deviation of Dolby System is shown in Fig. 17.

Low level signal is recorded by boosting and is played back by attenuating as illustrated in the figure.

For example, following a level in Fig. 17:

1. When -30 dB REC signal is applied.
2. It is boosted to -20 dB and recorded on a magnetic head. [ENCODE]
3. Playing back this recorded tape (at -20 dB).
4. The output signal is boosted by Dolby System and reproduced at -30 dB, the same level as recorded. [RECODE]

Fig. 18 shows the boosting frequency characteristics. Generally, the signal deviation increases in proportion to the frequency.

At playback, the characteristics are curved symmetrically against the recording curve and the overall REC and PLAY curve flattens as shown in Fig. 19. This 0 dB is called Dolby Level, which is the flux level of the cassette tape and standardized at the point of 200 pwb/mm, and it is indicated by +3 VU on the VU meter of this equipment.

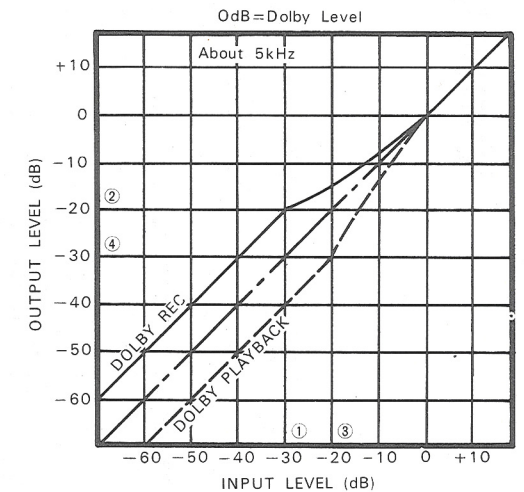


FIG. 17

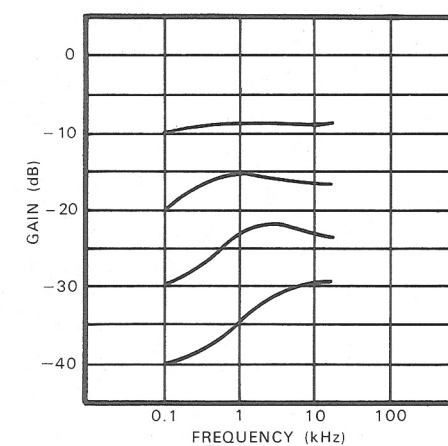


FIG. 18

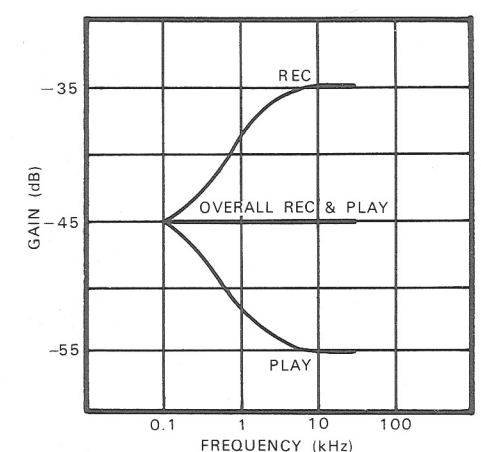


FIG. 19

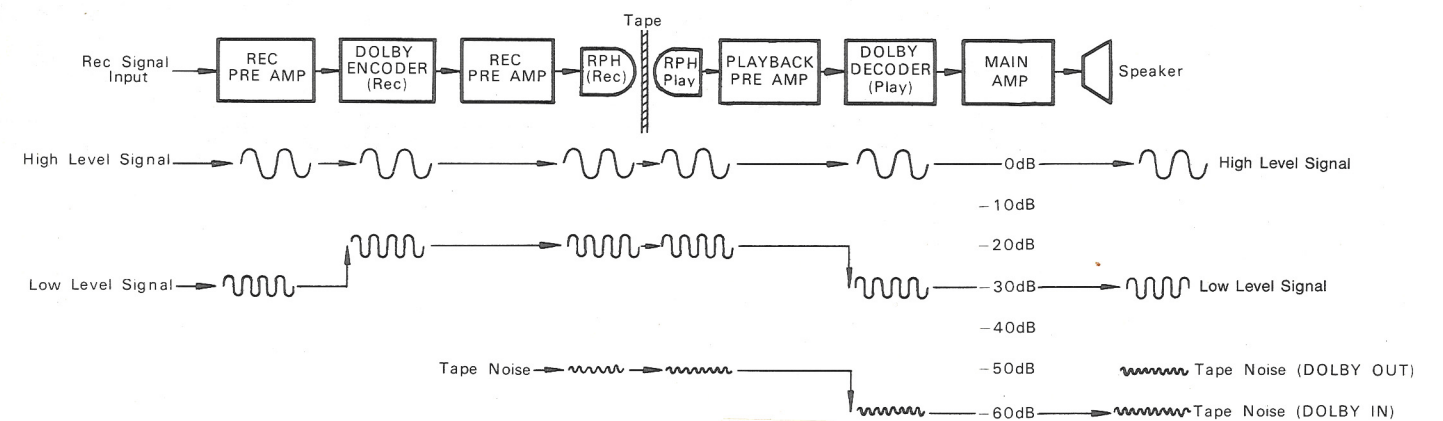


FIG. 20

DOLBY NOISE REDUCTION SYSTEM

PRINCIPLE OF NOISE REDUCTION

Much of the audible noise of a tape recorder is a hiss noise of high and medium frequency created when recording on a magnetic tape while some of it is playback amplifier noise.

A high input signal level suppresses noise but a low input signal level decreases S/N ratio and noise is easily heard.

For solving this problem as shown in Fig. 20, the Dolby System operates by boosting a low-level, high and medium frequency approx. 10 dB when recording, and attenuating the same signal in a complementary manner during playback.

During this process, the hiss noise of high and medium frequency and the amplifier noise are suppressed approx. 10 dB.

Fig. 21 shows noise reduction in Dolby IN/OUT.

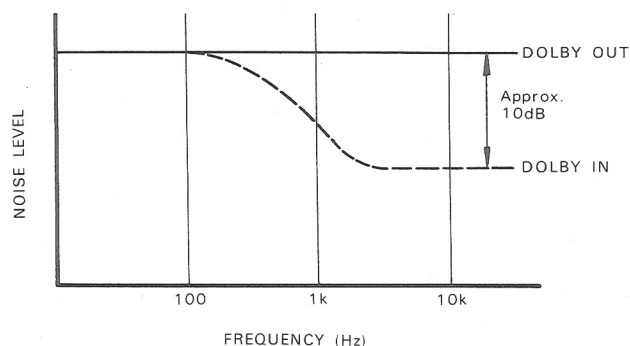


FIG. 21

CIRCUIT OPERATION

The operation of Noise Reduction System is shown in the block diagram of Fig. 22. By turning ST1, ST8, S10-4 and ST11 to REC/PLAY, this circuit operates on ENCODE/DECODE.

[ENCODE] : ST1, ST8 and ST11 in REC position.

Recording signal is applied to REC AMP and passes through AMP "A" of Dolby IC and the low-pass-filter "LPF", and then it enters AMP "B". LPF attenuates unwanted frequencies such as tape recorder bias or FM MPX sub. carrier signals to the level which will not influence the Dolby circuit operation. The output signal of AMP "B" is divided into two paths; one is directly supplied to ADDER "E", which is called a direct signal, while the other controls the noise reduction signal. This signal, passing through ST11, S10-4, high-pass-filter "HPF", variable resistance "F" and AMP "C", enters ADDER "E" and increases the direct signal.

As a result, REC signal from INVERTER "K" is boosted.

[DECODE] : Essentially the same circuitry.

ST1, ST8 and ST11 in PLAY position.

Playback signal from the playback head "RPH" is applied to PLAYBACK PRE AMP and passes through ST8, AMP "A" of Dolby IC, "LPF" and AMP "B", and then it enters ADDER "E" as the direct signal. One part of output signal from INVERTER "K", passing through ST11, is supplied to MAIN AMP, and the other, as Noise Reduction Signal, passes through S10-4, "HPF".

Variable Resistance "F" and AMP "C", are applied to ADDER "E" in opposite phase. As a result, the level of the playback signal is attenuated. This circuit operates to boost at REC position [ENCODE] and to attenuate at PLAY position [DECODE].

“G” is the rectifying and smoothing circuit of Noise Reduction Signal and controls Variable Resistance “F”. And “F” and “HPF” compose the dynamic high pass filter, and control the boosting and attenuating degree of high and medium frequency in response to the signal level (Figs. 18 and 19). “T” is the circuit setting the response time of Dolby.

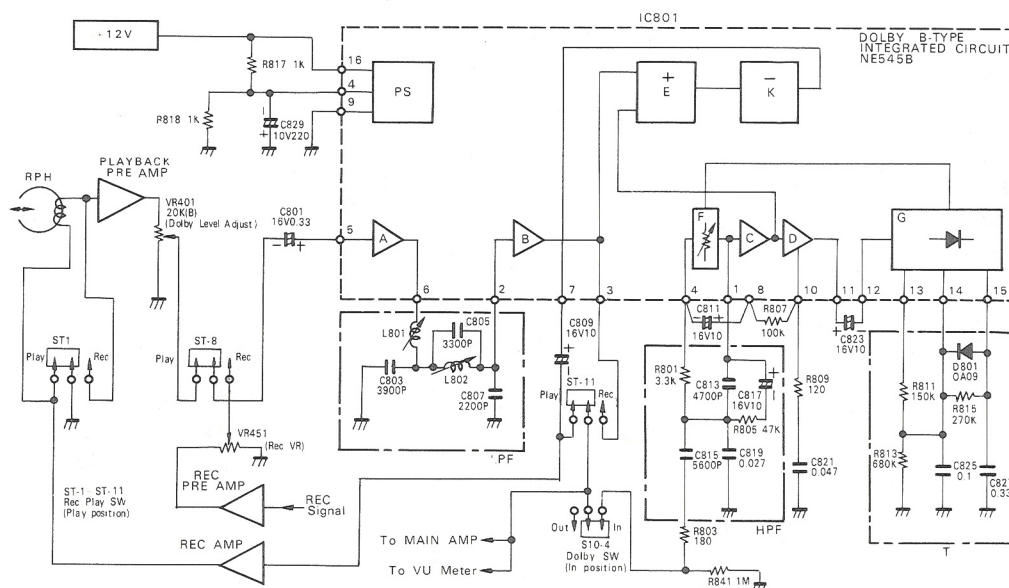


FIG. 22

This diagram illustrates the exploded view of a belt drive automatic turntable assembly. The central component is the turntable (1), which is mounted on a base plate (3). The turntable is driven by a motor (16) connected to a belt (11) and a pulley (15-1). The assembly includes various mechanical components such as gears (8, 13), levers (13-1, 14, 18-1), and springs (20-1, 20-2). The base plate (3) is secured with screws (12-1, 12-2) and features a label that reads "BELT DRIVE AUTOMATIC TURNTABLE". The diagram also shows the electrical wiring and connectors (17-1, 17-2, 17-3) for the motor and other components. The assembly is shown in a disassembled state to illustrate the relationship between the various parts.

14

SERVICING THE RECORD PLAYER

CARTRIDGE REPLACEMENT

1. Remove the headshell fixing nut by turning it clockwise and remove headshell from pickup arm.
2. Remove cartridge from headshell by removing the two screws and disconnecting the lead wires from cartridge, as shown in Fig. 24.
3. Using the two nuts attached, mount a new cartridge onto headshell so that the cartridge is perpendicular to the disc surface.

Note:

Correct stylus position can be obtained by relocating the cartridge, as shown in Fig. 25.

4. Connect the lead wires of identical colors as shown in Fig. 26.
5. Install headshell to pickup arm.

STYLUS REPLACEMENT

1. Lift pickup arm to a position that will make the stylus accessible.
2. Gently remove worn stylus and replace it with a new one, as shown in Fig. 27.

LUBRICATION

The record player has been thoroughly lubricated at the factory and under normal use should not require additional lubrication. When replacing some parts, however, it may be necessary to lubricate the parts as specified.

(Apply grease to **G** as shown in Figs. 28 and 29.)

Note:

Do not allow grease to touch motor pulley, belt and turntable.

STYLUS PRESSURE ADJUSTMENT

1. Release pickup arm from its seated position. Place a record on the turntable. Then, balance the pickup arm by turning in or out the balance weight until the stylus is leveled to the surface of the record (as viewed from the turntable unit side).
2. Set the stylus pressure dial to "0", and since the specified stylus pressure of the cartridge is 2.0 grams, set the balance weight dial to "2" by turning the weight counterclockwise (as viewed from the front panel side.).

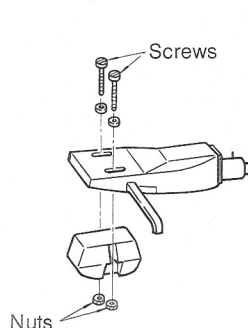


FIG. 24

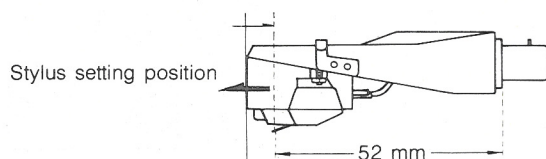


FIG. 25

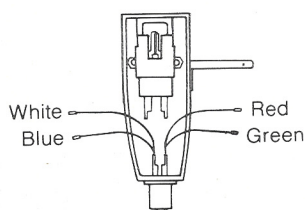


FIG. 26

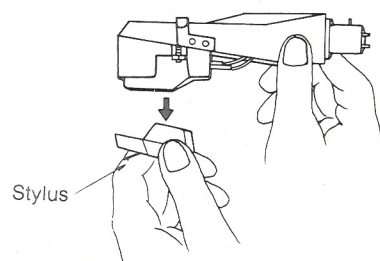


FIG. 27

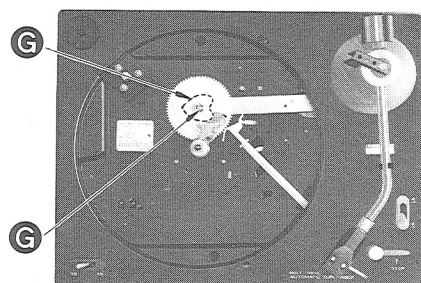


FIG. 28

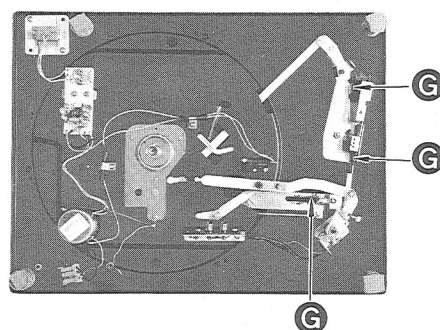


FIG. 29

16

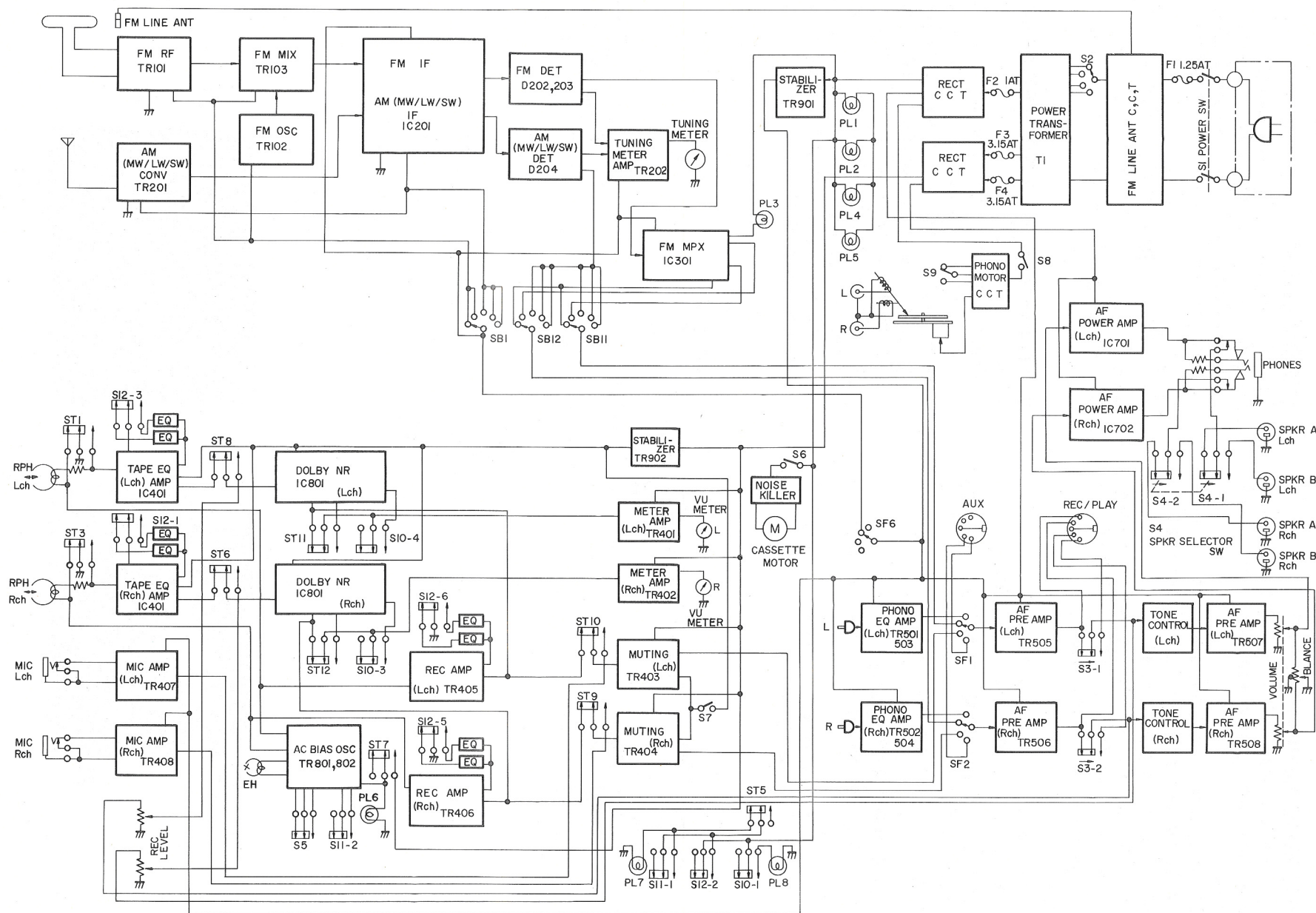


FIG. 30

REPLACEMENT PARTS LIST

- NOTES:**
1. Part numbers are indicated on most mechanical parts.
 2. Please use this part number for parts orders.
 3. Part numbers composed by bold face are service standard parts and may differ from production parts.
 4. Components identified by shaded area have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
 5. A ~ C rank.
A rank parts will cover 80% of repair needs.
A + B rank parts will cover 95% of repair needs.
C rank parts are less necessary.
 6. The term "M. Film" is the abbreviation of Metal Film.

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
TRANSISTORS							
TR101	2SK49	Transistor, FM RF Amplifier	1	A			
TR102	2SC1675-L	Transistor, FM Oscillator	1	A			
TR103	2SC1675-L	Transistor, FM Mixer	1	A			
TR201	2SC1359	Transistor, AM Converter	1	A			
TR202	2SC828	Transistor, Tuning	1	A			
TR401~406	2SC828	Transistor, VU Meter Amp., Muting and REC Amp.	6	A			
TR407,408	2SC1327	Transistor, MIC Amplifier	2	A			
TR501~504	2SC1327	Transistor, Phono Amplifier	4	A			
TR801	2SB175	Transistor, Bias Oscillator	1	A			
TR802	2SB324	Transistor, Bias Amplifier	1	A			
TR901	2SC1383	Transistor, Ripple Filter	1	A			
TR902	2SC1398	Transistor, Ripple Filter	1	A			
TR505~508	2SC900	Transistor, AF Amplifier	4	A			
INTEGRATED CIRCUITS							
IC201	AN217	IC, FM IF Amplifier	1	A			
IC301	AN271	IC, FM MPX Amplifier	1	A			
IC401	LA3122	IC, Tape Equalizer Amplifier	1	A			
IC701,702	STK022	IC, Power Amplifier	2	A			
IC801,802	NE545B	IC, Dolby	2	○ A			
DIODES							
D101,102	2-OA90	Diode, FM AGC	2	A			
D103	SC-15	Diode, FM AFC	1	A			
D201,204	2-OA90	Diode, AM DET, AM D AGC	2	A			
D202,203	2-OA90	Diode, FM DET	2	A			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
D205	2-OA90	Diode, AM Rectifier	1	A			
D206	VD1121	Diode, AOC	1	A			
D401,402	2-OA90	Diode, Rectifier	2	A			
D801,802	OA91	Diode, Rectifier	2	○ A			
D803	VD1121	Diode, AOC	1	A			
D901	S1RB10	Diode, Rectifier	1	A			
D902	MA1091	Diode, Rectifier	1	A			
D903,904	10DC1R	Diode, Rectifier	2	A			
D905,906	10DC1	Diode, Rectifier	2	A			
D909	MA1130	Diode, Stabilizer	1	A			
THERMISTOR							
TH801	RRT103	Thermistor, Temperature Compensator	1	A			
LAMPS AND FUSES							
PL1,2,4,5	XAMR53X300	Pilot Lamp	4	A			
PL3	XAMR34X500-1	Pilot Lamp	1	A			
PL6,7,8	XAMR53X300	Pilot Lamp	3	A			
F1	XBAS2A1201	Fuse, 1.25AT	1	A			
F2	XBAS2A1004	Fuse, 1AT	1	A			
F3,4	XBA2C31TR0	Fuse, 3.15AT	2	A			
METER							
M1	SSM60	Meter, Tuning	1	○ A			
M2,3	SSM86	Meter, VU Level	2	○ A			
COMPONENT COMBINATION							
Z201	EXA5DL04C	Component Combination	1	B			
Z202	EXAF203Z471	Component Combination	1	B			
Z901~904	RXAF103Z22EY	Component Combination	4	B			

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
COILS AND TRANSFORMERS							
L101	SLA4N2-O	Antenna Coil, FM	1	A			
L102	RLD4N30	Detector Coil, FM	1	A			
L103	RLQY30S1-O	Coil, FM IF Trap	1	A			
L104	SLO4N12-O	Oscillator Coil, FM	1	A			
L105	ELQ5A9R	Coil, Choke	1	A			
L201	SLF6G26-O	Ferrite Antenna Coil, MW/SW	1	A			
L202	SLA1C2-M	Antenna Coil, LW (NEM only)	1	A			
L203	SLA3M2	Antenna Coil, SW	1	A			
L204	SLO2M2-M	Oscillator Coil, MW	1	A			
L205	SLO1M2	Oscillator Coil, LW	1	A			
L206	SLO3M4	Oscillator Coil, SW	1	A			
L207	RLQY25S-5	Coil, Choke	1	A			
T101	RLI4M101	IFT, FM 1st IFT	1	A			
T201	SLI2M102	IFT, AM 1st	1	A			
T202	RLI7W105R-T	CFT	1	A			
T203	RLI2M402	IFT, AM	1	A			
T204	RLI4M501-M	IFT, FM Discriminator	1	A			
T205	RLI4M502-M	IFT, FM Discriminator	1	A			
T301	RLM1Z3Q-K	MPX Coil, FM	1	A			
T1	SLT5M28-W1	Power Transformer	1	○ A			
CF201,202	RVFCF10M12CR	CFT, FM	2	A			
L401,402	SLQU222-2Y	Coil, REC Equalizer	2	A			
L403,404	SLQV393-4Y	Coil, Trap	2	A			
L801,802	SLQC363-2K	Coil, 19 kHz Trap	2	○ A			
L803,804	SLQC233-2K	Coil, 38 kHz Trap	2	○ A			
L805	SLO9Z10-K	Bias Oscillator Coil	1	A			
L806	ELQ250A999	Coil, Choke	1	A			
T801	SLT6E2-D	Output Transformer, Bias Oscillator	1	A			
L901,902	SLQY35S-2S	Coil, RFC	2	B			
RESISTORS							
R101	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	1	C			
R102	ERD25TJ221	Carbon 220 ohm 1/4W ±5%	1	C			
R103	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	1	C			
R104	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	1	C			
R105	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	1	C			
R106	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	1	C			
R107	ERD25TJ183	Carbon 18k ohm 1/4W ±5%	1	C			
R108	ERD25TJ100	Carbon 10 ohm 1/4W ±5%	1	C			
R109,110	ERD25TJ224	Carbon 220k ohm 1/4W ±5%	2	C			
R111	ERD25TJ470	Carbon 47 ohm 1/4W ±5%	1	C			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
R112	ERD25TJ151	Carbon 150 ohm 1/4W ±5%	1	C			
R113	ERD25TJ331	Carbon 330 ohm 1/4W ±5%	1	C			
R201	ERD25TJ223	Carbon 22k ohm 1/4W ±5%	1	C			
R202	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	1	C			
R203	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	1	C			
R204	ERD25TJ100	Carbon 10 ohm 1/4W ±5%	1	C			
R205	ERD25TJ821	Carbon 820 ohm 1/4W ±5%	1	C			
R207	ERD25TJ470	Carbon 47 ohm 1/4W ±5%	1	C			
R208	ERD25TJ101	Carbon 100 ohm 1/4W ±5%	1	C			
R209	ERD25TJ152	Carbon 1.5k ohm 1/4W ±5%	1	C			
R210	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	1	C			
R211	ERD25TJ561	Carbon 560 ohm 1/4W ±5%	1	C			
R212	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	1	C			
R213	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	1	C			
R214	ERD25TJ101	Carbon 100 ohm 1/4W ±5%	1	C			
R215	ERD25TJ470	Carbon 47 ohm 1/4W ±5%	1	C			
R216,217	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R218	ERD25TJ474	Carbon 470k ohm 1/4W ±5%	1	C			
R219	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	1	C			
R220	ERD25TJ333	Carbon 33k ohm 1/4W ±5%	1	C			
R221,222	ERD25TJ224	Carbon 220k ohm 1/4W ±5%	2	C			
R223	ERD25TJ333	Carbon 33k ohm 1/4W ±5%	1	C			
R224	ERD25TJ682	Carbon 6.8k ohm 1/4W ±5%	1	C			
R226	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	1	C			
R227	ERD25TJ153	Carbon 15k ohm 1/4W ±5%	1	C			
R228	ERD25TJ681	Carbon 680 ohm 1/4W ±5%	1	C			
R229	ERD25TJ333	Carbon 33k ohm 1/4W ±5%	1	C			
R230	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	1	C			
R231	ERD25TJ471	Carbon 470 ohm 1/4W ±5%	1	C			
R233	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	1	C			
R234	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	1	C			
R235	ERD25TJ224	Carbon 220k ohm 1/4W ±5%	1	C			
R236	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	1	C			
R237	ERD25TJ223	Carbon 22k ohm 1/4W ±5%	1	C			
R238	ERD25TJ153	Carbon 15k ohm 1/4W ±5%	1	C			
R239	ERG1ANJ220	M. Film 22 ohm 1W ±5%	1	C			
R240	ERD25TJ330	Carbon 33 ohm 1/4W ±5%	1	C			
R241	ERD25TJ681	Carbon 680 ohm 1/4W ±5%	1	C			
R301	ERD25TJ272	Carbon 2.7k ohm 1/4W ±5%	1	C			
R302	ERD25TJ154	Carbon 150k ohm 1/4W ±5%	1	C			
R303	ERD25TJ223	Carbon 22k ohm 1/4W ±5%	1	C			
R304	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	1	C			
R305	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	1	C			
R306	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	1	C			
R307	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	1	C			
R308,309	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	2	C			
R310	ERD25TJ470	Carbon 47 ohm 1/4W ±5%	1	C			
R311	ERG1ANJ330	M. Film 33 ohm 1W ±5%	1	C			

NEM only

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
R312	ERD25TJ184	Carbon 180k ohm 1/4W ±5%	1	C			
R401,402	ERD25TJ100	Carbon 10 ohm 1/4W ±5%	2	C			
R403,404	ERD25TJ224	Carbon 220k ohm 1/4W ±5%	2	C			
R405,406	ERD25TJ824	Carbon 820k ohm 1/4W ±5%	2	C			
R407,408	ERD25TJ273	Carbon 27k ohm 1/4W ±5%	2	C			
R411,412	ERD25TJ153	Carbon 15k ohm 1/4W ±5%	2	C			
R413,414	ERD25TJ224	Carbon 220k ohm 1/4W ±5%	2	C			
R415,416	ERD25TJ152	Carbon 1.5k ohm 1/4W ±5%	2	C			
R417,418	ERD25TJ331	Carbon 330 ohm 1/4W ±5%	2	C			
R419,420	ERD25TJ222	Carbon 2.2k ohm 1/4W ±5%	2	C			
R421,422	ERD25TJ473	Carbon 47k ohm 1/4W ±5%	2	C			
R423,424	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	2	C			
R427,428	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	2	C			
R429,430	ERD25TJ334	Carbon 330k ohm 1/4W ±5%	2	C			
R431,432	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R433,434	ERD25TJ471	Carbon 470 ohm 1/4W ±5%	2	C			
R435,436	ERD25TJ470	Carbon 47 ohm 1/4W ±5%	2	C			
R437,438	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	2	C			
R440	ERA1ANJ151	M. Film 150 ohm 1W ±5%	1	C			
R441	ERD25TJ151	Carbon 150 ohm 1/4W ±5%	1	C			
R442	ERG1ANJ151	M. Film 150 ohm 1W ±5%	1	C			
R443	ERD25TJ333	Carbon 33k ohm 1/4W ±5%	1	C			
R444	ERG1ANJ680	M. Film 68 ohm 1/4W ±5%	1	C			
R445	ERG1ANJ470	M. Film 47 ohm 1W ±5%	1	C			
R446	ERG1ANJ220	M. Film 22 ohm 1W ±5%	1	C			
R447,448	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	2	C			
R449	ERD25TJ471	Carbon 470 ohm 1/4W ±5%	1	C			
R451,452	ERD25TJ105	Carbon 1M ohm 1/4W ±5%	2	C			
R453,454	ERD25TJ682	Carbon 6.8k ohm 1/4W ±5%	2	C			
R455,456	ERD25TJ331	Carbon 330 ohm 1/4W ±5%	2	C			
R457,458	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	2	C			
R459	ERD25TJ473	Carbon 47k ohm 1/4W ±5%	1	C			
R460	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	1	C			
R461,462	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R463,464	ERD25TJ682	Carbon 6.8k ohm 1/4W ±5%	2	C			
R469,470	ERD25TJ823	Carbon 82k ohm 1/4W ±5%	2	C			
R471,472	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R503,504	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R505,506	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	2	C			
R507,508	ERD25TJ471	Carbon 470 ohm 1/4W ±5%	2	C			
R509,510	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	2	C			
R511,512	ERD25TJ682	Carbon 6.8k ohm 1/4W ±5%	2	C			
R513,514	ERD25TJ222	Carbon 2.2k ohm 1/4W ±5%	2	C			
R515,516	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	2	C			
R517,518	ERD25TJ682	Carbon 6.8k ohm 1/4W ±5%	2	C			
R519,520	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	2	C			
R521,522	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	2	C			
R523,524	ERD25TJ155	Carbon 1.5M ohm 1/4W ±5%	2	C			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
R525,526	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	2	C			
R527,528	ERD25TJ471	Carbon 470 ohm 1/4W ±5%	2	C			
R529,530	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	2	C			
R531,532	ERD25TJ333	Carbon 33k ohm 1/4W ±5%	2	C			
R533,534	ERD25TJ683	Carbon 63k ohm 1/4W ±5%	2	C			
R535,536	ERD25TJ223	Carbon 22k ohm 1/4W ±5%	2	C			
R537,538	ERD25TJ153	Carbon 15k ohm 1/4W ±5%	2	C			
R539,540	ERD25TJ332	Carbon 3.3k ohm 1/4W ±5%	2	C			
R541,542	ERD25TJ223	Carbon 22k ohm 1/4W ±5%	2	C			
R543,544	ERD25TJ222	Carbon 2.2k ohm 1/4W ±5%	2	C			
R545,546	ERD25TJ155	Carbon 1.5M ohm 1/4W ±5%	2	C			
R547,548	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	2	C			
R549,550	ERD25TJ221	Carbon 220 ohm 1/4W ±5%	2	C			
R553	ERG1ANJ470	M. Film 47 ohm 1W ±5%	1	C			
R554	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	1	C			
R560	ERG1ANJ220	M. Film 22 ohm 1W ±5%	1	C			
R559	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	1	C			
R561,562	ERD25TJ473	Carbon 47k ohm 1/4W ±5%	2	C			
R563,564	ERD25TJ223	Carbon 22k ohm 1/4W ±5%	2	C			
R571,572	ERD25TJ103	Carbon 10k ohm 1/4W ±5%	2	C			
R701,702	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R703,704	ERD25TJ331	Carbon 330 ohm 1/4W ±5%	2	C			
R705,706	ERD50TJ4R7	Carbon 4.7 ohm 1/2W ±5%	2	C			
R707,708	ERD50TJ331	Carbon 330 ohm 1/2W ±5%	2	C			
R801,802	ERO25CKF3301	Carbon 3.3k ohm 1/4W ±1%	2	○ C			
R803,804	ERD25TJ181	Carbon 180 ohm 1/4W ±1%	2	C			
R805,806	ERD25TJ473	Carbon 47k ohm 1/4W ±5%	2	C			
R807,808	ERD25TJ104	Carbon 100k ohm 1/4W ±5%	2	C			
R809,810	ERD25TJ121	Carbon 120 ohm 1/4W ±5%	2	C			
R811,812	ERD25TJ154	Carbon 150k ohm 1/4W ±5%	2	C			
R813,814	ERD25TJ684	Carbon 680k ohm 1/4W ±5%	2	C			
R815,816	ERD25TJ274	Carbon 270k ohm 1/4W ±5%	2	C			
R817,818	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R819	ERD25TJ683	Carbon 68k ohm 1/4W ±5%	1	C			
R820	ERD25TJ221	Carbon 220 ohm 1/4W ±5%	1	C			
R821	ERD25TJ151	Carbon 150 ohm 1/4W ±5%	1	C			
R822	ERD25TJ221	Carbon 220 ohm 1/4W ±5%	1	C			
R823,824	ERD25TJ102	Carbon 1k ohm 1/4W ±5%	2	C			
R825	ERD25TJ220	Carbon 22 ohm 1/4W ±5%	1	C			
R826	ERG1ANJ101	M. Film 100 ohm 1W ±5%	1	C			
R827	ERG1ANJ151	M. Film 150 ohm 1W ±5%	1	C			
R841,842	ERD25TJ105	Carbon 1M ohm 1/4W ±5%	2	C			
R901	ERD25TJ472	Carbon 4.7k ohm 1/4W ±5%	1	C			
R902	ERG1ANJ220	M. Film 22 ohm 1W ±5%	1	C			
R904	ERG1ANJ220	M. Film 22 ohm 1W ±5%	1	C			
R905	ERD25TJ152	Carbon 1.5k ohm 1/4W ±5%	1	C			

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
CAPACITORS							
C102	ECCD1H101JC	Ceramic 100pF 50WV ±5%	1	C	Except NEM		
C103	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C104	ECCD1H120JC	Ceramic 12pF 50WV ±5%	1	C			
C105	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C106	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	1	C			
C107	ECCD1H080CC	Ceramic 8pF 50WV ±0.25pF	1	C			
C108	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	1	C			
C109	ECCD1H070CC	Ceramic 7pF 50WV ±0.25pF	1	C			
C110	ECCD1H040CC	Ceramic 4pF 50WV ±0.25pF	1	C			
C111	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	1	C			
C112	ECCD1H220JC	Ceramic 22pF 50WV ±5%	1	C			
C113	ECCD1H100FC	Ceramic 10pF 50WV ±5%	1	C			
C114	ECCD1H020CC	Ceramic 2pF 50WV ±0.25pF	1	C			
C115	ECCD1H100KV	Ceramic 10pF 50WV ±10%	1	C			
C116	ECCD1H080CC	Ceramic 8pF 50WV ±0.25pF	1	C			
C117	ECCD1H070CC	Ceramic 7pF 50WV ±0.25pF	1	C			
C118	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C201	ECCD1H330JC	Ceramic 33pF 50WV ±5%	1	C			
C202	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	1	C			
C203	ECCD1H101JC	Ceramic 100pF 50WV ±5%	1	C			
C204	ECCD1H470JC	Ceramic 47pF 50WV ±5%	1	C			
C205	ECCD1H050CC	Ceramic 5pF 50WV ±0.25pF	1	C			
C206	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	1	C			
C207,208	ECKD1H103MD	Ceramic 0.01mfd 50WV ±20%	2	C			
C209,210	ECKD1H223MD	Ceramic 0.022mfd 50WV ±20%	2	C			
C211	ECQS1361JZ	Styrol 360pF 100WV ±5%	1	C			
C212	ECQS1241JZ	Styrol 240pF 100WV ±5%	1	C			
C213	ECQS1392JZ	Styrol 3900pF 100WV ±5%	1	C			
C214	ECCD1H100FC	Ceramic 10pF 50WV ±0.25pF	1	C			
C215	ECQS1151JZ	Styrol 150pF 100WV ±5%	1	C			
C216	ECCD1H080CC	Ceramic 8pF 50WV ±0.25pF	1	C			
C217	ECEA16V220	Electrolytic 220mfd 16WV	1	C			
C218	ECKD1H223PF	Ceramic 0.022mfd 16WV +100,—0%	1	C			
C219	ECQS1152JZ	Styrol 1500pF 100WV ±5%	1	C			
C220	ECEA16V220	Electrolytic 220mfd 16WV	1	C			
C221	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C222	ECCD1H270JC	Ceramic 27pF 50WV ±5%	1	C			
C223	ECKD1H223MD	Ceramic 0.022mfd 50WV ±20%	1	C			
C224	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C226	ECKD1H223MD	Ceramic 0.022mfd 50WV ±20%	1	C			
C227	ECEA16V10	Electrolytic 10mfd 16WV	1	C			
C228	ECKD1H223PF	Ceramic 0.022mfd 16WV +100,—0%	1	C			
C230	ECCD1H181JC	Ceramic 180pF 50WV ±5%	1	C			
C231	ECCD1H270JC	Ceramic 27pF 50WV ±5%	1	C			
C232	ECCD1H101JC	Ceramic 100pF 50WV ±5%	1	C			
C233	ECEA35V4R7	Electrolytic 4.7mfd 35WV	1	C			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
C234	ECEA16V10	Electrolytic 10mfd 16WV	1	C	NEM only		
C235	ECEA50V3R3	Electrolytic 3.3mfd 50WV	1	C			
C236	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C237	ECKD1H103MD	Ceramic 0.01mfd 50WV ±20%	1	C			
C238	ECEA16V10	Electrolytic 10mfd 16WV	1	C			
C239	ECKD1H222KB	Ceramic 0.0022mfd 50WV ±10%	1	C			
C240	ECQS1472JZ	Styrol 4700pF 100WV ±5%	1	C			
C241	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	1	C			
C301	ECEA50V1	Electrolytic 1mfd 50WV	1	C			
C302	ECKD1H333PF	Ceramic 0.033mfd 50WV +100,—0%	1	C			
C303	ECKD1H222KB	Ceramic 0.0022mfd 50WV ±10%	1	C			
C304	ECQM05183MZ	Polyester 0.018mfd 50WV ±20%	1	C			
C305	ECEA16V33	Electrolytic 33mfd 16WV	1	C			
C306	ECEA10V100	Electrolytic 100mfd 10WV	1	C			
C307	ECEA16V33	Electrolytic 33mfd 16WV	1	C			
C308,309	ECKD1H153MD	Ceramic 0.015mfd 50WV ±20%	2	C			
C310,311	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	2	C			
C312	ECEA16V220	Electrolytic 220mfd 16WV	1	C			
C401,402	ECAG16E4R7	Electrolytic 4.7mfd 16WV	2	C			
C403,404	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	2	C			
C405,406	ECCD1H560JC	Ceramic 56pF 50WV ±5%	2	C			
C407,408	ECEA16V33	Electrolytic 33mfd 16WV	2	C			
C409,410	ECEA16V10	Electrolytic 10mfd 16WV	2	C			
C411,412	ECQM05392MZ	Polyester 0.0039mfd 125WV ±20%	2	C			
C415,416	ECEA16N4R7	Electrolytic 4.7mfd 16WV	2	C			
C417,418	ECEA50V3R3	Electrolytic 3.3mfd 50WV	2	C			
C419,420	ECEA16V10	Electrolytic 10mfd 16WV	2	C			
C421,422	ECAG16ER33	Electrolytic 0.33mfd 16WV	2	C			
C423,424	ECEA50V1	Electrolytic 1mfd 50WV	2	C			
C425,426	ECQM05473MZ	Polyester 0.047mfd 125WV ±20%	2	C			
C427,428	ECQM05103MZ	Polyester 0.01mfd 125WV ±20%	2	C			
C429,430	ECEA16V10	Electrolytic 10mfd 16WV	2	C			
C431,432	ECQM05472MZ	Polyester 0.0047mfd 125WV ±20%	2	C			
C433,434	ECQS1102JZ	Styrol 1000pF 100WV ±5%	2	C			
C436,437	ECEA25V220	Electrolytic 220mfd 25WV	2	C			
C438	ECEA16V470	Electrolytic 470mfd 16WV	1	C			
C439	ECEA16V47	Electrolytic 47mfd 16WV	1	C			
C440	ECET16R3300S	Electrolytic 3300mfd 16WV	1	C			
C441	ECEA10V220	Electrolytic 220mfd 10WV	1	C			
C443,444	ECQM05183MZ	Polyester 0.018mfd 125WV ±20%	2	C			
C445	ECEA50V3R3	Electrolytic 3.3mfd 50WV	1	C			
C451,452	ECAG16E4R7	Electrolytic 4.7mfd 16WV	2	C			
C453,454	ECKD1H102KB	Ceramic 0.001mfd 50WV ±10%	2	C			
C455,456	ECAG16ER22	Electrolytic 0.22mfd 16WV	2	C			
C457	ECKD1H223PF	Ceramic 0.022mfd 50WV +100,—0%	1	C			
C459	ECEA35V4R7	Electrolytic 4.7mfd 35WV	1	C			
C461,462	ECAG16ER1	Electrolytic 0.1mfd 16WV	2	C			
C463,464	ECQM05393MZ	Polyester 0.039mfd 125WV ±5%	2	C			

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
C501,502	ECEA16V47	Electrolytic 47mfd 16WV	2	C			
C503,504	ECCD1H560JC	Ceramic 56pF 50WV $\pm 10\%$	2	C			
C505,506	ECKD1H102KB	Ceramic 0.001mfd 50WV $+100, -0\%$	2	C			
C507,508	ECCD1H560JC	Ceramic 56pF 50WV $\pm 10\%$	2	C			
C509,510	ECEA16V33	Electrolytic 33mfd 16WV	2	C			
C511~514	ECEA50V1	Electrolytic 1mfd 50WV	4	C			
C515,516	ECKD1H102KB	Ceramic 0.001mfd 50WV $+100, -0\%$	2	C			
C517,518	ECEA50V1	Electrolytic 1mfd 50WV	2	C			
C519,520	ECKD1H222KB	Ceramic 0.0022mfd 50WV $\pm 20\%$	2	C			
C521,522	ECKD1H153MD	Polyester 0.015mfd 125WV $\pm 20\%$	2	C			
C523,524	ECKD1H223MD	Ceramic 0.022mfd 50WV $\pm 20\%$	2	C			
C525,526	ECQM05683MZ	Polyester 0.068mfd 125WV $\pm 20\%$	2	C			
C527,528	ECEA50V1	Electrolytic 1mfd 50WV	2	C			
C529,530	ECKD1H102KB	Ceramic 0.001mfd 50WV $\pm 10\%$	2	C			
C531,532	ECEA50V1	Electrolytic 1mfd 50WV	2	C			
C535	ECEA16V220	Electrolytic 220mfd 16WV	1	C			
C536	ECEA10V100	Electrolytic 100mfd 10WV	1	C			
C537,538	ECQM05333MZ	Polyester 0.033mfd 125WV $\pm 20\%$	2	C			
C539,540	ECQM05103MZ	Polyester 0.01mfd 125WV $\pm 20\%$	2	C			
C541	ECEA16V220	Electrolytic 220mfd 16WV	1	C			
C701,702	ECAG16E3R3	Electrolytic 3.3mfd 16WV	2	C			
C703,704	ECEA35V47	Electrolytic 47mfd 35WV	2	C			
C705,706	ECKD1H102KB	Ceramic 0.001mfd 50WV $\pm 10\%$	2	C			
C707,708	ECEA16V47	Electrolytic 47mfd 16WV	2	C			
C709,710	ECQM05473MZ	Polyester 0.047mfd 125WV $\pm 20\%$	2	C			
C711,712	ECEA50V1	Electrolytic 1mfd 50WV	2	C			
C801,802	ECAG16ER33	Electrolytic 0.33mfd 16WV	2	C			
C803,804	ECQS1392JZ	Styrol 3900pF 100WV $\pm 5\%$	2	C			
C805,806	ECQS1332KZ	Styrol 3300pF 125WV $\pm 10\%$	2	C			
C807,808	ECQS1222JZ	Styrol 2200pF 100WV $\pm 5\%$	2	C			
C809~812	ECEA16V10	Electrolytic 10mfd 16WV	4	C			
C813,814	ECQS1472JZ	Styrol 4700pF 100WV $\pm 5\%$	2	C			
C815,816	ECQS1562JZ	Styrol 5600pF 100WV $\pm 5\%$	2	C			
C817,818	ECEA16V10	Electrolytic 10mfd 16WV	2	C			
C819,820	ECQM05273FZ	Polyester 0.027mfd 50WV $\pm 1\%$	2	C			
C821,822	ECQM05473JZ	Polyester 0.047mfd 50WV $\pm 5\%$	2	C			
C823,824	ECEA16V10	Electrolytic 10mfd 16WV	2	C			
C825,826	ECQM05104KZ	Polyester 0.1mfd 125WV $\pm 10\%$	2	C			
C827,828	ECQM05334KZ	Polyester 0.33mfd 125WV $\pm 10\%$	2	C			
C829,830	ECEA16V220	Electrolytic 220mfd 16WV	2	C			
C831,832	ECAG16ER1	Electrolytic 0.1mfd 16WV	2	C			
C833	ECQS1471JZ	Ceramic 470pF 100WV $\pm 5\%$	1	C			
C834	ECQS1182JZ	Styrol 1800pF 100WV $\pm 5\%$	1	C			
C835	ECQM05333MZ	Polyester 0.033mfd 125WV $\pm 20\%$	1	C			
C836	ECQM05683MZ	Polyester 0.068mfd 125WV $\pm 20\%$	1	C			
C837	ECQM05104KZ	Polyester 0.1mfd 125WV $\pm 10\%$	1	C			
C838,839	ECCD1H331JC	Ceramic 330pF 50WV $\pm 5\%$	2	C			
C840	ECEA16V470	Electrolytic 470mfd 16WV	1	C			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
C901	ECET16R3300S	Electrolytic 3300mfd 16WV	1	C			
C902	ECKD1H223PF	Ceramic 0.022mfd 50WV $+100, -0\%$	1	C			
C903	ECEA10V100	Electrolytic 100mfd 10WV	1	C			
C904,905	ECET25R332SU	Electrolytic 3300mfd 25WV	2	C			
C906	ECEA25V2200	Electrolytic 2200mfd 25WV	1	C			
C907	ECQM05334MZ	Polyester 0.33mfd 125WV $\pm 20\%$	1	C			
C908	ECKD1H223PF	Ceramic 0.022mfd 50WV $+100, -0\%$	1	C			
C912	ECKDDS101MB	Ceramic 100pF 250WV $\pm 20\%$	1	C			
C913	ECEA16V220	Electrolytic 220mfd 16WV	1	C			
VARIABLE RESISTORS							
VR301	EVLT0AA00B14	Variable Resistor, Pre-set, 10kB, Stereo Eye	1	A			
VR401,402	EVLS3AA00B24	Variable Resistor, Pre-set, 20kB, Dolby	2	A			
VR403,404	EVLS3AA00B14	Variable Resistor, Pre-set, 10kB	2	A			
VR451,452	EVH6UA363A24	Variable Resistor, 20kA, REC Level	2	A			
VR461,462	EVLT0AA00B53	Variable Resistor, 5kB, REC Current Control	2	A			
VR501~504	EWK8EA331A54	Variable Resistor, 50kA, Bass and Treble Control	2	A			
VR505,506	EWFN3AK30A54	Variable Resistor, 50kA, Volume Control	2	A			
VR507	EVH0UA363G54	Variable Resistor, 50kG, Balance Control	1	A			
VR801	EVLS3AA00B13	Variable Resistor, Pre-set, 1kB	1	A			
VR802,803	EVLS3AA00B14	Variable Resistor, Pre-set, 10kB	2	A			
VARIABLE CAPACITORS							
CT101,102	SCVC158J124K	Tuning Capacitor	1	A			
CT103	ECV1ZW10X32	Trimmer Capacitor	1	A			
CT201~206	SCV3T12S	Trimmer Capacitor	6	A			
SWITCHES							
S1	ESB7067	Switch, Power	1	A			
S2	ESE3742	Switch, Voltage Selector	1	B			
S3	SSH52	Switch, Tape Monitor	1	A			

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
S4	SSH32	Switch, Speaker Selector	1	A			
S5	SSS28	Switch, Whistle Defeat	1	A			
S10	SSS82	Switch, Dolby	1	○ A			
S11	SSS80	Switch, Bias Nor — CrO ₂	1	○ A			
S12	SSS84	Switch, Equalizer Nor — CrO ₂	1	○ A			
ST1~12	ESD86021	Switch, REC-Play	1	○ A			
SF1~6	SSR72K	Switch, Function Selector	1	A			
SB1~12	SSR76K	Switch, Band Selector	1	A			
SX	ESA2056	Remote Wire Assembly	1	○ A			
CHASSIS							
CH1	SUV108-1	Bracket, Power Switch	1	C			
CH2	RHG109	Cushion, F ANT	1	C			
CH3	SMN802	Bracket, Meter	1	○ C			
CH4	SDH186	Reflector, Meter	1	○ C			
CH5	SDA32-2	Holder, Pointer	1	C			
CH5-1	SDP580	Pointer, Dial	1	C			
CH6	SHG9100	Cushion, Lamp	3	C			
CH7	SGL88	Stereo Eye	1	C			
CH8	SHG950-2	Cushion, Stereo Eye and Pointer	2	C			
CH9	SUS184	Spring	3	C			
CH10	SDD46K	Drum, Dial	1	C			
CH11	RDS4170A	Spring, Dial	1	C			
CH12	RDR20	Pulley	4	C			
CH13	RDR23	Pulley	1	C			
CH14	RDY36	Shaft, Pulley	3	C			
CH15	RDY34	Shaft, Pulley	2	C			
CH16	RNW150-2	Washer, Pulley	5	C			
CH17	RDZ05-A	Dial Cord	165cm	C			
CH18	SDT9302K	Tuning Shaft	1	C			
CH19	SMX124-2	Cover, Switch	1	C			
CH20	SHG9094	Cushion, Lamp	1	○ C			
CH21	RHR969ZA	Latch	8	C			
CH22	SMX134	Box, Primary Circuit	1	○ C			
CH23	SMX136	Cover, Primary Circuit Box	1	○ C			
CH24	RHG3-1	Cushion, ANT Lead	1	C			
CH25	SXE102	Eject Arm Ass'y	1	C			
CH26	SUS180	Spring, Eject Arm	1	C			
CH27	SUD92	Spacer, Player Mounting	2	C			
CH28	SJA88	Power Cord, IT, GF, GF-2	1	B			
	SJA46	Power Cord, DEM, HO, FIN, NEM	1	B			
	SJA68	Power Cord, SEV	1	B			
CH29	RJF7A	Fuse Holder	8	B			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
CH30	RJJ78	Jack, Microphone	2	B			
CH31	SNE420	Nut, MIC Jack	2	C			
CH32	SJS9202-1	Terminal Board, FM ANT	1	C			
CH33	SJS9206-1	Terminal Board, AM ANT	1	C			
CH34	SJF9206	Jack Board	1	C			
CH35	SJF9404	Jack Board	1	C			
CH36	RJJ108ZA-H	Headphone Jack	1	○ C			
CH37	SUV122	Cover, Headphone Jack	1	C			
CH38	XNSS12	Nut, Headphone Jack	1	○ C			
CH39	SWP64	Lead Ass'y, Phono Output	1	○ C			
CH40	SWK200	Connector Ass'y, 5P (MC7)	1	○ C			
CH41	SWK202	Connector Ass'y, 3P (MC6)	1	○ C			
CH42	SWK204	Connector Ass'y, 5P (MC8)	1	○ C			
CH43	SHR134	Strain Relief	2	C			
CH44	XTV3+8B	Screw, Cassette Mounting	5	C			
CH45	XYN26+C8	Screw, Cassette Panel Mounting	2	C			
CH46	XMC27+10FZ	Screw, Cassette Panel Mounting	2	C			
CH47	XTW3+8BFZ	Screw, Hinge Mounting (4), Bottom Cover (1), Rear Cover (5) Mounting	10	C			
CH48	SHR9014-1	Blind	1	C			
CH49	XYN4+C12S	Screw, Bottom Cover Mounting	4	C			
ACCESSORIES							
A1,2	WM2201N	Microphone	2	A			
A3,4	WN133	Microphone Stand	2	A			
A5	SQX5740	Instruction Book, DEM, FIN, NEM	1	○ C			
	SQX5742	Instruction Book, IT, GF, GF-2, HO, SEV	1	○ C			
A6	SPT1HCZNRZA	Demonstration Tape	1	○ C			
A7	SJP9206	Plug, FM ANT	1	C			
PACKING							
PA1	SPN2550	Carbon, Inner	1	○ B			
PA2	SPN2352-1	Pad, Right	1	○ C			
PA3	SPN2552	Pad, Left	1	○ C			
PA4	SPN2356	Pad, Dust Cover	2	C			
PA5	SPN2358	Pad, Turntable	1	C			

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
PA6	SPN2370-1	Pad, Centre Unit	1	○ C			
PA7	SPN2362	Accessory Box	1	C			
PA8	SPN2364	Cover, Accessory Box	1	C			
PA9	SPN2384-1	Pad, Rear	1	○ C			
PA10	SPN2440-2	Protector Sheet	2	C			
PA11	SPH6026	Soft Sheet, Dust Cover	1	C			
PA12	SNE208	Screw, Player Transit	3	C			
PA13	SNW601	Washer, Player Transit	3	C			
CABINET							
CA1	SKA1660	Cabinet Ass'y, Black	1	○ A			
CA1-1	SHG9058-1	Cushion, Dust Cover	2	B			
CA2	SYE440	Cassette Panel Ass'y	1	○ B			
CA2-1	SGX978	Ornament, Cassette Panel	1	○ C			
CA3	SKU2340	Rear Board	1	○ B			
	SKU2341	Rear Board, for IT	1	○ B			
CA4	SYE394	Cassette Cover Assembly	1	A			
CA5	SGE638	Dust Cover	1	A			
CA6	SHS3018	Felt	1	C			
CA7	SYL6-1	Foot	3	C			
CA8	SYU294	Bottom Cover	1	○ B			
CA9	SBC206	Button, Reset	1	○ B			
CA10	SXE108	Fook Ass'y	1	C			
CA11	SYP248	Escutcheon Ass'y	1	○ A			
CA11-1	SGE586-1	Transparent Plate, Dial	1	B			
CA11-2	SKE282	Guide, Push Button	3	C			
CA11-3	SME152-2	Plate, MIC Jack	1	○ C			
CA12	SBN666K	Knob, Tuning	1	A			
CA13	SBN668K-2	Knob, Volume Control and Others	6	○ A			
CA14	SBC196	Button, Power	1	B			
CA15	SBC198	Button, Push	2	B			
CA16	SGE634-1	Front Cover, Cassette	1	B			
CA17	SGX960-2	Ornament, Cassette Front Cover	1	○ C			
CA18	SBN674K-4	Knob, REC	2	○ A			
CA19	SBH5508	Hinge, Dust Cover	2	B			

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks			
SPEAKER SYSTEM (SB-250L) (B) — GF							
CA30	SKA1502	Speaker Enclosure	2	○ A			
CA31	SYB166	Baffle Board Assembly	2	A			
CA32	SKU2120	Rear Board	2	A			
CA33	RGB159A	Badge	2	B			
CA34	SJP2206-2	Speaker Cord	2	A			
SP1,2	EAS20PL116SA	Woofer, 20cm	2	A			
SP3,4	EAS5PH15SC	Tweeter, 5cm	2	A			
CA35	SGN2600	Name Plate	2	B			
	ECEA25Y3R3	Electrolytic 3.3mfd 25WV	2	B			
CA36	SJR206	Terminal Strip, 2P	2	C			
PA31	SPN1724	Carton, Speaker System	1	C			
PA32	SPN2346	Pad, Top and Bottom	2	C			
PA33	SPN2280-1	Pad, Center	1	C			
PA34	SPH6030	Sheet, Speaker System	2	C			
SPEAKER SYSTEM (SB-250L) (B) — IT							
CA30	SKA1502	Speaker Enclosure	2	A			
CA31	SYB166	Baffle Board Assembly	2	A			
CA32	SKU2120	Rear Board	2	A			
CA33	RGB159A	Badge	2	B			
CA34	SJP2206-2	Speaker Cord	2	A			
SP1,2	EAS20PL116SA	Woofer, 20cm	2	A			
SP3,4	EAS5PH15SC	Tweeter, 5cm	2	A			
CA35	ECEA25Y3R3	Electrolytic 3.3mfd 25WV	2	B			
CA36	SJR206	Terminal Strip, 2P	2	C			
PA31	SPN1724-1	Carbon, Speaker System	1	○ C			
PA32	SPN2346	Pad, Top and Bottom	2	C			
PA33	SPN2280-1	Pad, Center	1	C			
PA34	SPH6030	Sheet, Speaker System	2	C			
CASSETTE TAPE RECORDER/PLAYER (SJD76)							
1	SYE436	REC Button	1	C			
2	SYE434	Push Button	6	C			
3	SMQ1232	REC Safety Lever	1	C			
4	SMQ662	Spring, REC Safety Lever	1	C			
5	SNE432	Circlip, REC Safety Lever	1	C			
6	SJH34	R/P Head	1	○ C			

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks		
7	SJH14	Erase Head	1	C		
8	SMQ678	Spring, R/P Head and Flywheel Bracket	2	C		
9	SMQ1360	Spring A, Head Panel	2	C		
10	SMQ1362-1	Head Base	1	C		
11	SMQ1388	Eject Stop Lever w/Spring	1	C		
12	SMQ1390	Auto-Stop Lever Assembly	1	C		
13	SMQ1392	Spacer, Auto-Stop Lever	1	C		
14	SMQ1364	Pressure Roller Assembly	1	C		
15	SMQ1366	Spring, Pressure Roller	1	C		
16	SMQ1626	Reel Assembly	2	C		
17	SMQ1344	Tape Counter	1	C		
18	SMQ1056	Counter Belt	1	C		
19	SMQ1354	Bracket Arm	1	C		
20	SMQ1358	Spring, Brake Arm	1	C		
21	SMQ1394	Spring, Tape Holder	1	C		
22	MHT5PS	Motor	1	C		
23	SMQ1384	Motor Pulley w/Screw (XXA2A-3)	1	C		
24	SMQ716	Rubber Cushion, Motor	3	C		
25	SMQ718	Spacer, Motor	3	C		
26	SMQ1378	Motor ON-OFF Switch S8	1	C		
27	SMQ1396	Eject Slide Lever w/Spring	1	C		
28	SMQ1374	Spacer A, Eject Slide Lever	1	C		
29	SMQ1398	Spacer B, Eject Slide Lever	1	C		
30	SMQ1368	Clutch Assembly w/Spring	1	C		
31	SMQ1370-1	Bearing	1	C		
33	SMQ148	Washer, Oil Thrower	2	C		
34	SMQ1402	Nylon Washer	1	C		
35	SMQ686	Flywheel	1	C		
36	SMQ1372	Main Belt	1	C		
37	SMQ1404	Flywheel Bracket	1	C		
38	SMQ1382-1	FF Arm Assembly w/Spring	1	C		
39	SMQ1406	Brake Operating Plate	1	C		
40	SMQ1408	Rewind Arm w/Spring	1	C		
41	SMQ1386	Rewind Idler	1	C		
42	SMQ1410	Pause Lever	1	C		
43	SMQ1412	Spacer, Pause Lever	1	C		
44	SMQ1414	Pause Slide Lever A w/Spring	1	C		
45	SMQ1416	Pause Slide Lever B	1	C		
46	SMQ1376	Pause Click Lever	1	C		
47	SMQ1418	Spring, Pause Click Lever	1	C		
48	SMQ1640	Bracket, Switch	1	C		
49	SMQ1642	Muting, Switch	1	C		
50	SMQ1650	REC Slide Lever	1	○ C		
51	SUS208-1	Spring Plate, REC Switch	1	C		
52	SMQ1426	Spacer, REC Slide Lever	1	C		
54	SMQ1430	Rewind Lever	1	C		
55	SMQ1432	FF Lever	1	C		
56	SMQ1434	Nylon Washer 6.1φ	1	C		

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks		
57	SMQ1436-1	Kick Lever, Auto-Stop	1	C		
58	SMQ1438	Spacer, Kick Lever	1	C		
59	SMQ1530	Play Lever	1	C		
60	SMQ1524	Spacer, Play Lever	1	C		
61	SMQ1444	Spring B, Head Panel	1	C		
63	SMQ1654	Push Button Frame Assembly	1	C		
64	SMQ1652	Hanger, Spring	1	○ C		
65	SMQ1638	Spring, REC Lever	1	C		
100	XYN2+C5	Screw 2 mm × 5	3	C		
101	XSN2+8	Screw 2 mm × 5, Muting Switch	1	C		
102	XSS2+5	Screw 2 mm × 5	1	C		
103	XSN2+10	Screw 2 mm × 10	3	C		
104	XYN26+C5	Screw 2.6 mm × 1	6	C		
105	XSN26+6	Screw 2.6 mm × 6	4	C		
106	XSB26+4	Screw 2.6 mm × 4, Head Panel	2	C		
107	XSB26+6	Screw 2.6 mm × 6, Head Panel	1	C		
108	XSN26+10	Screw 2.6 mm × 10	1	C		
109	XSS3+5S	Screw 3 mm × 5, Counter Mounting	2	C		
111	XSN2D6	Screw 2mm × 6	1	C		
112	XWE2A6	Washer 2φ	3	C		
113	XWE26D7	Washer 2.6φ, 0.5t	5	C		
115	XYN26+C6	Screw 2.6 mm × 6, Play Lever	3	C		
150	XUC12FT	Circlip 1.2φ	2	C		
151	XUC15FT	Circlip 1.5φ	4	C		
152	XUCS19	Circlip 1.9φ	1	C		
153	XUC2FT	Circlip 2φ	2	C		
155	XUC25FT	Circlip 2.5φ	1	C		
156	XUC32FT	Circlip 3.2φ	1	C		
157	XUC4FT	Circlip 4φ	2	C		
RECORD PLAYER (SAP-825DM)						
1	SFTE623-1	Turntable	1	C		
1-1	SFTG829-02	Turntable Rubber	1	C		
1-2	SFTK809-01	Trim, Turntable	1	C		
2	SFGB321-1	Belt	1	C		
3	SFBP825D01E	Main Plate Assembly	1	C		
4	SFTU825E01E	Turntable Shaft Assembly	1	C		
4-1	SFTJ623-1E	Turntable Shaft	1	C		
4-2	XTV3+5BFU	Self Tapping Screw	1	C		
4-3	XTV3+6BFU	Self Tapping Screw	3	C		
4-4	SFER1C	Lug	1	C		
5	SFWE154A1	45 RPM Adaptor Complete	1	C		
5-1	SFKT823-1	Adaptor Holder	1	C		

REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks		
5-2	XNG4BFU	Nut	1	C		
6	SFKU829E01	Pickup Arm Reset Assembly	1	C		
6-1	XWA4BFU	Spring Washer 4φ	1	C		
6-2	XNG4HFU	Nut	1	C		
7	EPU-35SMKD	Pickup Arm Assembly	1	C		
7-1	SFP-CC3501K	Shell Assembly	1	C		
7-2	SFP-WG3501K	Balance Weight Assembly	1	C		
7-3	SFP-AM3505K	Pickup Base	1	C		
7-4	XWA4BF	Washer 4φ	2	C		
7-5	XNG4BFU	Nut	2	C		
7-6	SFUP623-1	Protection Cover	1	C		
7-7	SFP-RT3500K	Lifter Assembly	1	C		
7-8	SFUM623-1	Lifter Fixing Cam	1	C		
7-9	SFP-SP3500	Spring, Pickup	1	C		
7-10	SFXN623-1	Nut	1	C		
7-11	XSN3+16FU	Self Tapping Screw	1	C		
7-12	SFQA829-03	Spring, Lifter	1	C		
8	SFUG825C01A	Main Gear Assembly	1	C		
8-1	XUC5FY	Circlip	1	C		
9	SFKT623-1E	Play/Cut Knob Assembly	1	C		
9-1	SFXB530-1	Play/Cut Lever Base	1	C		
9-2	XWA9BFU	Spring Washer	1	C		
9-3	SFXN530R1	Nut	1	C		
9-4	SFUP825C02E	Play/Cut Lever Assembly	1	C		
9-5	XUC5FY	Circlip 5φ	1	C		
9-6	SFUM623-6	Cut Plate	1	C		
9-7	SFQH831-1	Spring, Cut Plate	1	C		
10	SFUM623-4E	Operating Cam Assembly	1	C		
10-1	SFQH623-02	Spring, Operating Cam	1	C		
10-2	SFXG623-2	Pivot Screw	1	C		
10-3	SFUM623-5A	Pickup Arm Fixing Plate	1	C		
11	SFUC633-1F	Starting Lever Assembly	1	C		
11-1	CSTW-3	Circlip	1	C		
12	SFXG623-05	Switch Lever Shaft	1	C		
12-1	XNG3BFU	Nut	1	C		
12-2	XWA3BF	Spring Washer	1	C		
12-3	SFUM623-09	Switch Lever	1	C		
12-4	XUC4FY	Circlip	1	C		
13	SFUB827-01E	Operating Plate Assembly	1	C		
13-1	SFQH623-1	Spring, Operating Plate	1	C		
	XUC5FY	Circlip 5φ	1	C		
	XUC4FY	Circlip 4φ	1	C		
	SFXW028-01	Washer	1	C		
14	SFUM825C02	Cueing Cover	1	C		
15	SFUK825H02A	Cueing Lever Assembly	1	C		
15-1	SFUK825C01E	Bracket, Cueing Lever	1	C		
15-2	SFUP825D02	Cueing Lever	1	C		
15-3	SFXW829T02	Washer	1	C		

Ref. No.	Part No.	Description	Per Set (pcs.)	Remarks		
15-4	XUC5FY	Circlip 5φ	1	C		
15-5	SFUM825C01	Cueing Cam	1	C		
15-6	XUC3FY	Circlip 3φ	1	C		
15-7	SFQH825H01	Spring, Cueing	1	C		
16	SFUM825D01	Motor Plate Holder Assembly	1	C		
16-1	SFMC020L01E	Motor Assembly w/Governor Circuit	1	C		
16-2	SFXO020L01	Stud, Motor Mounting	3	C		
16-3	SFGC020L01	Rubber Cushing	3	C		
16-4	XWE26D75BW	Washer	3	C		
16-5	XYN26+C8FU	Screw, Motor Mounting	3	C		
16-6	SFUZ825H01	Insulating Sheet	1	C		
16-7	XTV3+6BFU	Screw, Motor Plate Holder	4	C		
17	SFDA825H01A	Power Source Plug Assembly	1	C		
17-1	SFUP530-1	Lead Clamper	2	C		
17-2	SFGT829T02	Rubber Tube	1	C		
17-3	XTN3+6BFU	Screw	2	C		
18	SFDS-AM9688	Micro Switch (S8)	1	C		
18-1	XTN3+18BFU	Screw, Micro Switch Mounting	1	C		
19	SFUM825C02	Speed Selector Cover	1	C		
19-1	SFDS825H01A	Speed Selector Switch Assembly (S9)	1	C		
19-2	SFDS-T-129LM	Speed Selector Switch	1	C		
19-3	SFUP825D01	Switch Base	1	C		
19-4	SFKT825D01	Switch Lever	1	C		
19-5	XTV3+6BFU	Screw, Switch Mounting	2	C		
20	SFQC925-01	Spring, Cushion	4	C		
20-1	SFXO929-02	Spacer	4	C		
20-2	XYN4+C10FU	Screw	4	C		
20-3	SFUZ929-01	Cushion A	4	C		
20-4	SFCZ929-01	Cushion B	4	C		
21	SFUP829A01E	PU Output Socket Assembly	1	C		
21-1	XTV3+6BFU	Screw	2	C		
	SFNN825H01	Name Paper	1	C		
	SFNZ825H01	Caution, Clamp	1	C		
	SFNH825H01	Label, Stylus	1	C		
	SFNZ020C03	Caution, Safety	1	C		
	EPC-78SMBD	Cartridge w/Stylus	1	C		
	EPS-35STSD	Stylus, Diamond	1	C		